ROOM AIR-CONDITIONING TECHNICAL MANUAL & PARTS LIST

WALL MOUNTED TYPE ROOM AIR-CONDITIONER

(Split system, air cooled cooling only type)

SRK10CFV-4, 13CFV-4

MITSUBISHI HEAVY INDUSTRIES, LTD.

TECHNICAL MANUAL

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1 GENERAL INFORMATION

1.1 Specific features

The “MITSUBISHI HEAVY INDUSTRIES, LTD.” room air-conditioner: SRK series are of split and wall mounted type and the unit consists of indoor unit and outdoor unit with refrigerant precharged in factory. The indoor unit is composed of room air cooling equipment with operation control switch and the outdoor unit is composed of condensing unit with compressor.

(1) Remote control flap & louver

The flap & louver can be automatically controlled by operating wireless remote control.

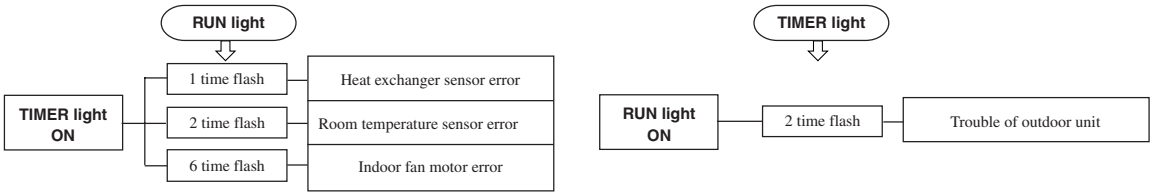
- Flap swing : The flaps swing up and down successively.
- Louver swing : The louvers swing left and right successively.
- 3D auto operation : Fan speed and air flow direction are automatically controlled, allowing the entire room to be efficiently conditioned.
- Memory flap : Once the flap & louver position is set, the unit memorizes the position and continues to operate at the same position from the next time.

(2) Automatic operation

When the remote control switch is set on “auto( )”, it will either automatically decide operation mode such as cooling and thermal dry, or operate in the operation mode before it has been turned to automatic control.

(3) Self diagnosis function

- We are constantly trying to do better service to our customers by installing such judges that show abnormality of operation as follows.



1.2 How to read the model name

Example : SR K 10 C FV -4

- -4 : For Asia
- FV : Series No.
- C : Cooling only type
- 10 : Product capacity
- K : Wall mounted type
- SR : Split type room air-conditioner

2 SELECTION DATA

2.1 Specifications

Model SRK10CFV-4 (Indoor unit)
SRC10CFV-4 (Outdoor unit)

(220V)

Item			Model	SRK10CFV-4	SRC10CFV-4
Cooling capacity(1)			BTU	9000	
Power source				1 Phase, 220V, 50Hz	
Operation data(1)	Cooling input		kW	0.73	
	Running current (Cooling)		A	3.4	
	Inrush current		A	18	
	COP (In cooling)			3.62	
	Noise level(4)		dB	39	45
Exterior dimensions Height × Width × Depth			mm	268 × 790 × 199	540 × 780 × 290
Color				Fine snow	Stucco white
Net weight			kg	8.5	30
Refrigerant equipment Compressor types & Q'ty				–	RSA201A018
	Motor		kW	–	0.69
	Starting method			–	Line starting
Heat exchanger				Louver fins & inner grooved tubing	Louver fins & inner grooved tubing
Refrigerant control				Capillary tubes	
Refrigerant(3)			kg	R22 0.9 (Pre-Charged up to the piping length of 7.5m)	
Refrigerant oil			ℓ	0.35 (SUNISO 4GSI or ATMOS NM56)	
Air handling equipment Fan type & Q'ty				Tangential fan × 1	Propeller fan × 1
	Motor		W	16	14
Air flow (at High)			CMM	9.0	26.5
Air filter, Q'ty				Polypropylene net (washable) × 2	–
Shock & vibration absorber				–	Cushion rubber (for compressor)
Electric heater				–	–
Operation control Operation switch				Wireless-Remote control	–
Room temperature control				Microcomputer thermostat	–
Pilot lamp				RUN (Green), TIMER (Yellow), HI POWER (Green), 3D AUTO (Green)	–
Safety equipment				Frost protection, Fan motor error protection	Internal thermostat (for compressor)
Refrigerant piping	O.D		mm (in)	Liquid line: ø6.35 (1/4") Gas line: ø9.52 (3/8")	
	Connecting method			Flare connecting	
	Attached length of piping			Liquid line: 0.4 m Gas line : 0.33 m	–
	Insulation			Necessary (Both sides)	
Drain hose				Connectable	
Power source cord				2.5 m (3 cores with Earth)	
Connection wiring	Size × Core number			1.5 mm² × 3 cores (Including earth cable)	
	Connecting method			Terminal block (Screw fixing type)	
Accessories (included)				Mounting kit	
Optional parts				–	

Notes (1) The data are measured at the following conditions.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS C9612

(2) The operation data are applied to the 220 V districts respectively.

(3) The refrigerant quantity to be charged includes the refrigerant in 7.5 m connecting piping.
(Purging is not required even in the short piping.)
If the piping length is longer, when it is 7.5 to 15 m, add 10 g refrigerant per meter.

(4) Expressed in sound pressure level.

Model SRK13CFV-4 (Indoor unit)
SRC13CFV-4 (Outdoor unit)

(220V)

Item			Model	SRK13CFV-4	SRC13CFV-4
Cooling capacity(1)			BTU	12500	
Power source				1 Phase, 220V, 50Hz	
Operation data(1)	Cooling input		kW	1.06	
	Running current (Cooling)		A	4.9	
	Inrush current		A	29	
	COP (In cooling)			3.45	
	Noise level(4)		dB	40	49
Exterior dimensions Height × Width × Depth			mm	268 × 790 × 199	540 × 780 × 290
Color				Fine snow	Stucco white
Net weight			kg	8.5	37
Refrigerant equipment Compressor types & Q'ty				–	RSA201A017
	Motor		kW	–	1.09
	Starting method			–	Line starting
Heat exchanger				Louver fins & inner grooved tubing	Straight fins & inner grooved tubing
Refrigerant control				Capillary tubes	
Refrigerant(3)			kg	R22 0.93 (Pre-Charged up to the piping length of 7.5m)	
Refrigerant oil			ℓ	0.41 (SUNISO 4GSI or ATMOS NM56)	
Air handling equipment Fan type & Q'ty				Tangential fan × 1	Propeller fan × 1
	Motor		W	16	22
Air flow (at High)			CMM	9.5	29.5
Air filter, Q'ty				Polypropylene net (washable) × 2	–
Shock & vibration absorber				–	Cushion rubber (for compressor)
Electric heater				–	–
Operation control Operation switch				Wireless-Remote control	–
Room temperature control				Microcomputer thermostat	–
Pilot lamp				RUN (Green), TIMER (Yellow), HI POWER (Green), 3D AUTO (Green)	–
Safety equipment				Frost protection, Fan motor error protection	Internal thermostat (for compressor)
Refrigerant piping	O.D		mm (in)	Liquid line: ø6.35 (1/4") Gas line: ø12.7 (1/2")	
	Connecting method			Flare connecting	
	Attached length of piping			Liquid line: 0.4 m Gas line : 0.33 m	–
	Insulation			Necessary (Both sides)	
Drain hose				Connectable	
Power source cord				2.5 m (3 cores with Earth)	
Connection wiring	Size × Core number			1.5 mm² × 3 cores (Including earth cable)	
	Connecting method			Terminal block (Screw fixing type)	
Accessories (included)				Mounting kit	
Optional parts				–	

Notes (1) The data are measured at the following conditions.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27°C	19°C	35°C	24°C	ISO-T1, JIS C9612

(2) The operation data are applied to the 220 V districts respectively.

(3) The refrigerant quantity to be charged includes the refrigerant in 7.5 m connecting piping.
(Purging is not required even in the short piping.)
If the piping length is longer, when it is 7.5 to 15 m, add 10 g refrigerant per meter.

(4) Expressed in sound pressure level.

2.2 Range of usage & limitations

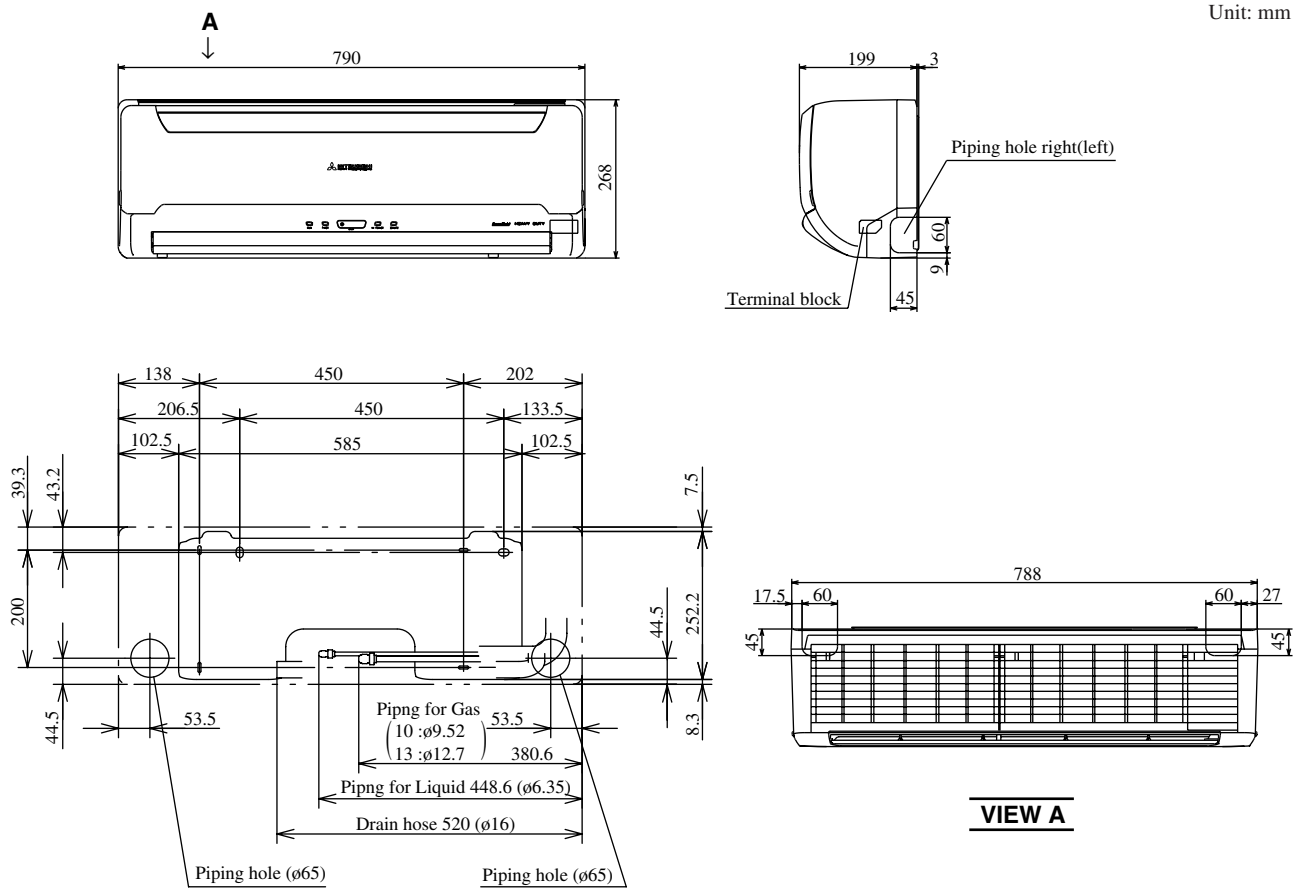
Item \ Models	All models
Indoor return air temperature (Upper, lower limits)	Refer to the selection chart
Outdoor air temperature (Upper, lower limits)	
Refrigerant line (one way) length	Max. 15m
Vertical height difference between outdoor unit and indoor unit	Max. 5m (Outdoor unit is higher) Max. 5m (Outdoor unit is lower)
Power source voltage	Rating ± 10%
Voltage at starting	Min. 85% of rating
Frequency of ON-OFF cycle	Max. 10 times/h
ON and OFF interval	Max. 3 minutes

2.3 Exterior dimensions

(1) Indoor unit

Models SRK10CFV-4, 13CFV-4

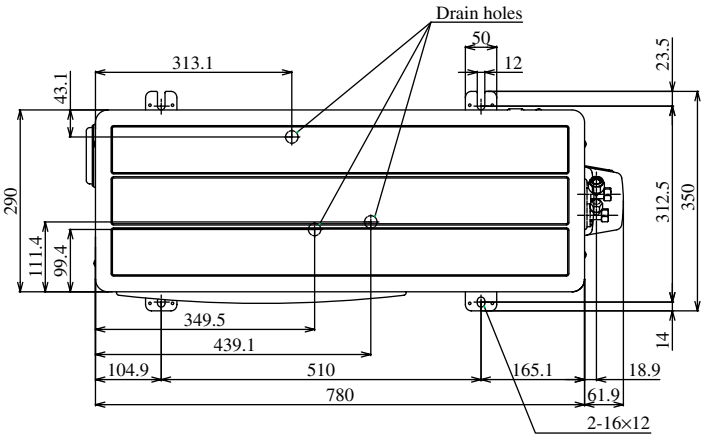
Unit: mm

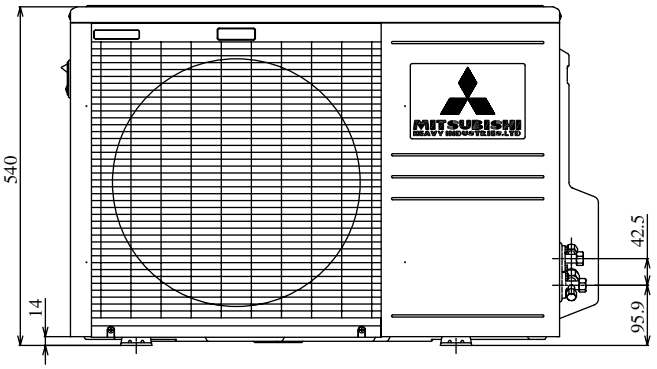


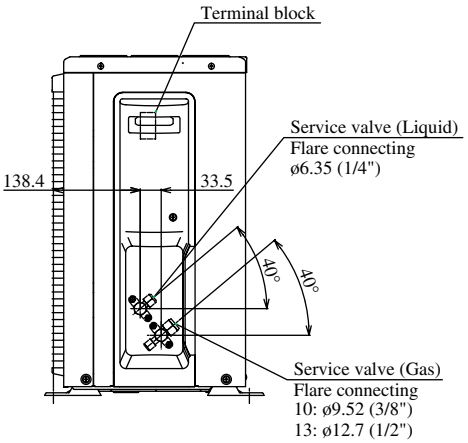
(2) Outdoor unit

Models SRC10CFV-4, 13CFV-S

Unit: mm

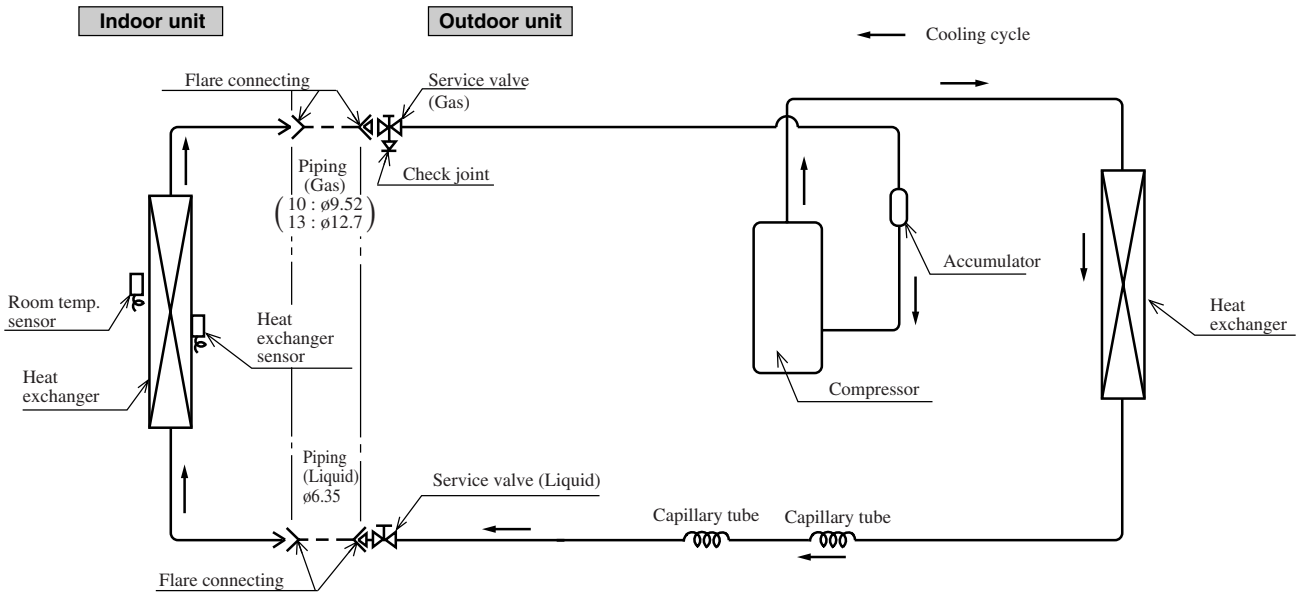






2.4 Piping system

Models All models

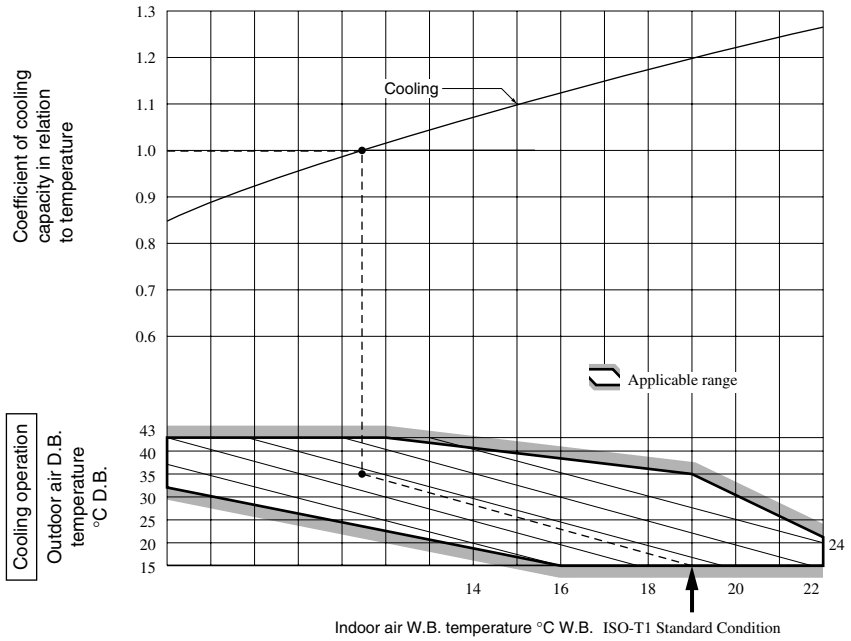


2.5 Selection chart

Correct the cooling capacity in accordance with the conditions as follows. The net cooling capacity can be obtained in the following way.

Net capacity = Capacity shown on specification × Correction factors as follows.

(1) Coefficient of cooling capacity in relation to temperatures



(2) Correction of cooling capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling capacity in relation to the one way piping length between the indoor and outdoor units.

Piping length [m]	7	10	15
Cooling	1.0	0.99	0.975

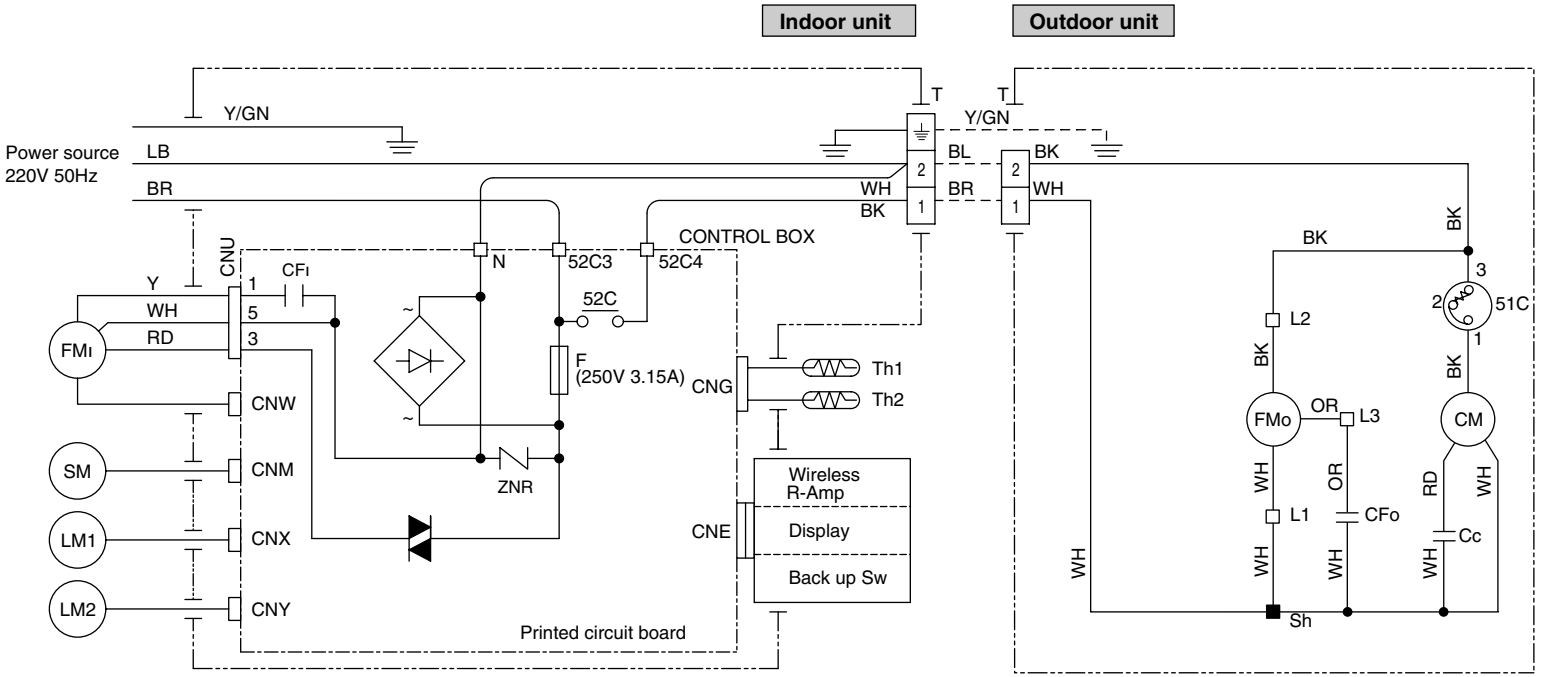
How to obtain the cooling capacity

Example : The net cooling capacity of the model SRK13CFV-4 with the piping length of 15m, indoor wet-bulb temperature at 19.0˚C and outdoor dry-bulb temperature 35˚C is Net cooling capacity = $\underset{\text{SRK13CFV-4}}{12500} \times \underset{\text{Length 15m}}{0.975} \times \underset{\text{Factor by air temperatures}}{1.0} =$ **12187 BTU**

3 ELECTRICAL DATA

3.1 Electrical wiring

Models SRK10CFV-4, 13CFV-4



Color symbol

BK	Black
BL	Blue
BR	Brown
LB	Light blue
Y	Yellow
RD	Red
OR	Orange
WH	White
Y/G	Yellow/Green

Meaning of marks

Symbol	Parts name	Symbol	Parts name
C_C	Capacitor for CM	**$LM_{1,2}$**	Louver motor
CF_I	Capacitor for FM_I	**$Th_{1,2}$**	Sensor
CF_O	Capacitor for FM_O	**ZNR**	Varistor
CM	Compressor motor	**51C**	Motor protector for CM
F	Fuse	**52C**	Magnetic contactor for CM
FM_I	Fan motor (Indoor unit)	**T**	Terminal block
FM_O	Fan motor (Outdoor unit)		
SM	Flap motor		

Table of relay operations

Relay symbol	Control part	Operation: Cooling
52C	CM	○

Notes (1) ○ : denotes magnetized relay ×: denotes demagnetized relay

(2) Th_1 is room temperature sensor. Th_2 (the heat exchanger sensor) is frost prevention sensor.

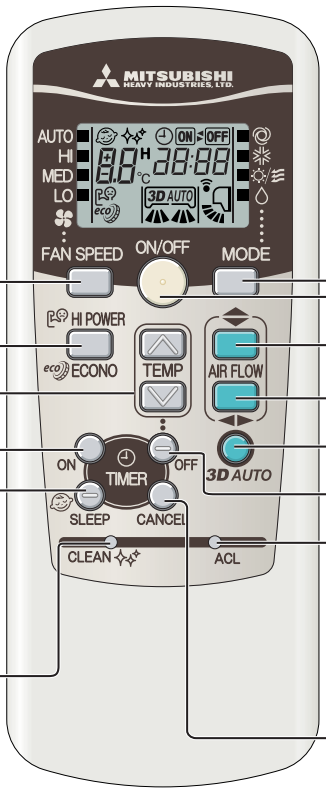
4 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

4.1 Operation control function by remote control switch

Remote control

Models SRK10CFV-4, 13CFV-4

◆ Operation selection



FAN SPEED button

Each time the button is pushed, the ■ indicator is switched over in turn.

HI POWER/ECONO button

This button changes the HIGH POWER/ ECONOMY mode.

TEMPERATURE button

This button sets the room temperature. (This button changes the present time and TIMER time.)

ON TIMER button

This button selects ON TIMER operation.

SLEEP button

This button changes to SLEEP operation.

CLEAN switch

This switch changes the CLEAN mode.

- The above illustration shows all controls, but in practice only the relevant parts are shown.

OPERATION MODE select button

Each time the button pushed, the ■ indicator is switched over in turn.

ON/OFF (luminous) button

Press for starting operation, press again for stopping.

AIR FLOW (UP/DOWN) button

This button changes the air flow (up/down) mode.

AIR FLOW (LEFT/RIGHT) button

This button changes the air flow (left/right) mode.

3D AUTO button

This button sets 3D AUTO operation.

OFF TIMER button

This button selects OFF TIMER operation.

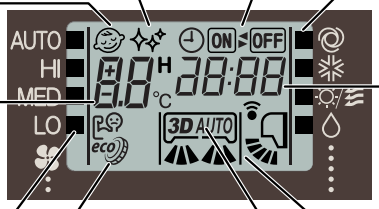
RESET switch

Switch for resetting microcomputer and setting time.

CANCEL button

This button cancels the ON timer, OFF timer, and SLEEP operation.

◆ Indication selection



CLEAN indicator

Indicates during CLEAN operation.

SLEEP indicator

Indicates during SLEEP operation.

TEMPERATURE indicator

Indicates set temperature.
(Does not indicate temperature when operation mode is on AUTO)

FAN SPEED indicator

Indicates set air flow rate with ■ lamp.

HI POWER/ECONO MODE indicator

Indicates during HIGH POWER/ECONOMY mode operation.

ON/OFF TIMER indicator

Indicates during ON/OFF TIMER operation.

OPERATION MODE indicator

Indicates selected operation with ■ lamp.
[(Auto) • (Cool) • (Fan) • (Dry)]

TIME indicator

Indicates present time or timer setting time.

AIR FLOW indicator

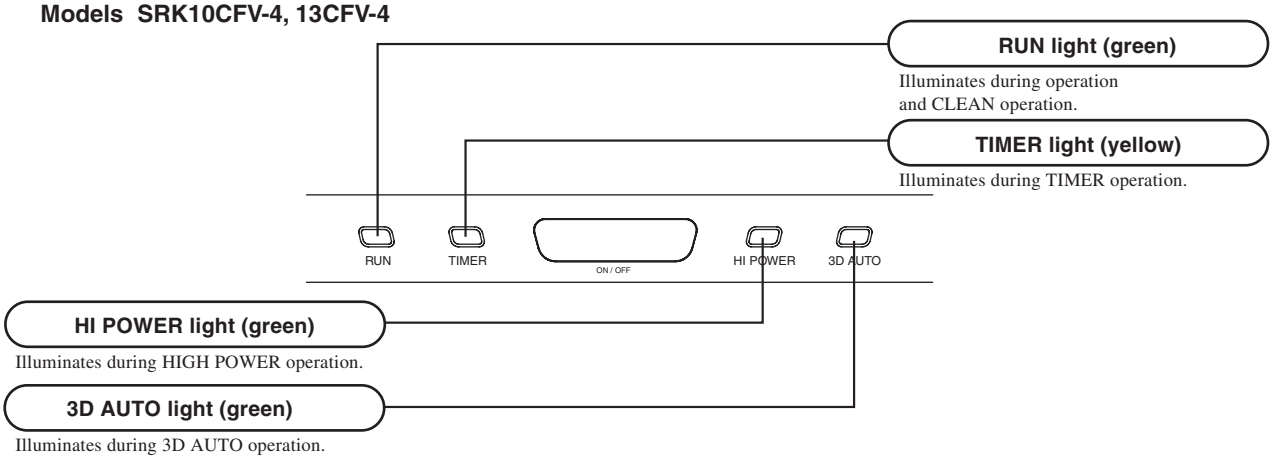
Shows selected flap and louver mode.

3D AUTO indicator

Indicates during 3D AUTO operation.

Unit indication selection

Models SRK10CFV-4, 13CFV-4



4.2 Unit ON/OFF button

When the remote control batteries become weak, or if the remote control is lost or malfunctioning, this button may be used to turn the unit on and off.

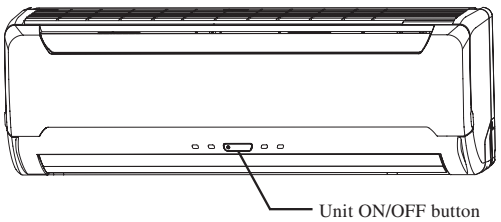
(1) Operation

Push the button once to place the unit in the automatic mode. Push it once more to turn the unit off.

(2) Details of operation

The unit will go into the automatic mode in which it automatically determines, from room temperature (as detected by sensor), whether to go into the cooling or thermal dry modes.

Function / Operation mode	Room temperature setting	Fan speed	Flap	Timer switch
Cooling	About 24ºC	Auto	Auto	Continuous
Thermal dry	About 24ºC			



4.3 Power blackout auto restart function

(1) Power blackout auto restart function is a function that records the operational status of the air-conditioner immediately prior to it being switched off by a power cut, and then automatically resumes operations at that point after the power has been restored.

(2) The following settings will be cancelled:

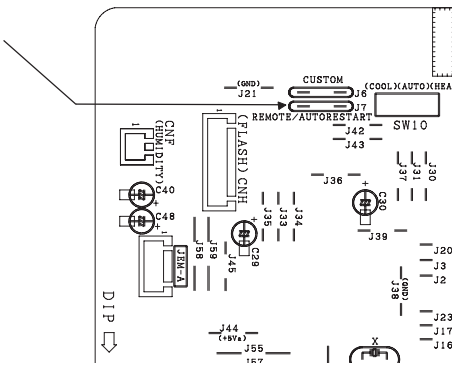
(a) Timer settings

(b) High-power operations

Notes (1) The power blackout auto restart function is set at on when the air-conditioner is shipped from the factory. Consult with your dealer if this function needs to be switched off.

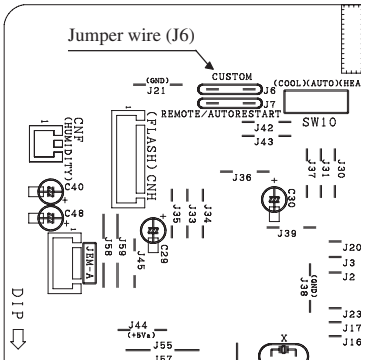
(2) When power failure ocurrs, the timer setting is cancelled. Once power is resumed, reset the timer.

(3) If the jumper wire (J7) "AUTO RESTART" is cut, auto restart is disabled. (See the diagram at right)



4.4 Custom cord switching procedure

If two wireless remote controls are installed in one room, in order to prevent wrong operation due to mixed signals, please modify the printed circuit board in the indoor unit's control box and the remote control using the following procedure. Be sure to modify both boards. If only one board is modified, receiving (and operation) cannot be done.



(1) Modifying the indoor unit's printed circuit board

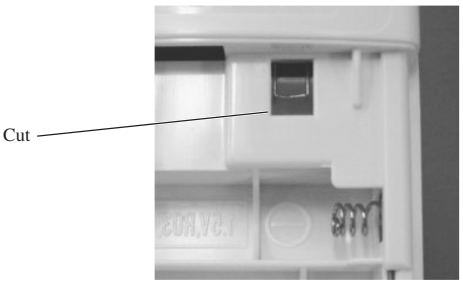
Take out the printed circuit board from the control box and cut off jumper wire (J6) using wire cutters.

After cutting of the jumper wire, take measures to prevent contact with the other the lead wires, etc.

(2) Modifying the wireless remote control

(a) Remove the battery.

(b) Cut the jumper wire shown in the figure at right.



4.5 Flap and louver control

Control the flap and louver by AIRFLOW ⬍ (UP/DOWN) and ⬌ (LEFT/RIGHT) button on the wireless remote control.

(1) Swing flap

Flap moves in upward and downward directions continuously.

(2) Swing louver

Louver moves in left and right directions continuously.

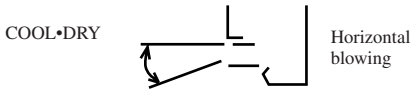
(3) When not operating

The flap returns to the position of air flow directly below, when operation has stopped.

(4) Memory flap (Flap or Louver stopped)

When you press the AIRFLOW (UP/DOWN or LEFT/RIGHT) button once while the flap or louver is operating, it stops swinging at an angle. Since this angle is memorized in the microcomputer, the flap or louver will automatically be set at this angle when the next operation is started.

- Recommendable stopping angle of the flap



4.6 3D auto operation

Control the flap and louver by 3D AUTO button on the wireless remote control.

Fan speed and air flow direction are automatically controlled, allowing the entire room to efficiently conditioned.

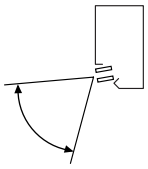
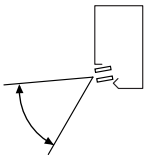
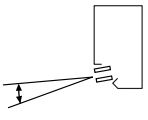
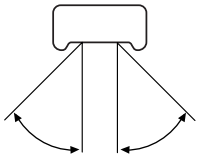
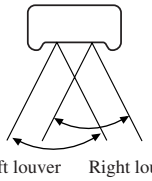
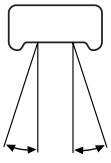
(1) Detail of operation

(a) Perform STEP1 → STEP2 → STEP3 → STEP4 one time.

(b) After performing STEP4 in (a) above, the next steps to be carried out are determined by the difference between the room temperature and the setting temperature.

1) Room temperature – Setting temperature > 5ºC: STEP2 → STEP3 → STEP4 are performed.

2) Room temperature – Setting temperature ≦ 5ºC: STEP3 → STEP4 are performed.

Operation step	STEP1	STEP2	STEP3	STEP4
Fan speed	Setting fan speed	Auto : HIGH POWER Other than Auto: Setting fan speed	Setting fan speed	
Flap				
Louver	 Left louver Right louver The left louver and right louver operate in opposite directions to each other on the left and right sides.	 Left louver Right louver The left louver and right louver operate in the same direction left and right.	 Left louver Right louver The left louver and right louver operate in opposite directions to each other on the left and right sides.	
Conditions for jumping to next STEP	—	20 cycle	60 cycle	60 cycle

4.7 Timer operation

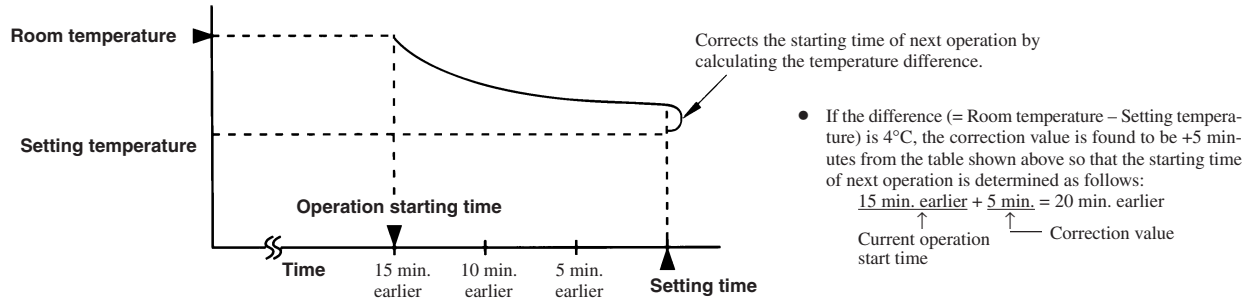
(1) Comfortable timer setting (ON timer)

If the timer is set at ON when the operation select switch is set at the cooling, or the cooling in auto mode operation is selected, the comfortable timer starts and determines the starting time of next operation based on the initial value of 15 minutes and the relationship between the room temperature at the setting time (temperature of room temperature sensor) and the setting temperature. (Max. 60 minutes)

Operation mode	Operation start time correction value (Min.)		
At cooling	3 < Room temp. – Setting temp.	1 < Room temp. – Setting temp. ≦ 3	Room temp. – Setting temp. ≦ 1
	+5	No change	–5

Notes (1) At 5 minutes before the timer ON time, operation starts regardless of the temperature of the room temperature sensor (Th1).
(2) This function does not actuate when the operation select switch is set at the dehumidifying as well as the dehumidifying in the auto mode. However, the operation of item (1) above is performed during the dehumidifying in the auto mode.
(3) During the comfortable timer operation, both the run light and timer light illuminate and the timer light goes off after expiration of the timer, ON setting time.

(Example) Cooling

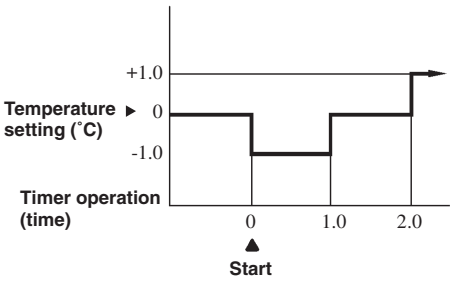


- If the difference (= Room temperature – Setting temperature) is 4°C, the correction value is found to be +5 minutes from the table shown above so that the starting time of next operation is determined as follows:
  15 min. earlier + 5 min. = 20 min. earlier
  ↑ Current operation start time
  ↑ Correction value

(2) Sleep timer operation

Pressing the SLEEP button causes the temperature to be controlled as shown in the following chart with respect to the set temperature.

Cooling, DRY



(3) OFF timer operation

The Off timer can be set at a specific time (in 10-minute units) within a 24-hour period.

4.8 Installation location setting

When the indoor unit is installed at the end of a room, control the air flow direction so that it is not toward the side walls. If you set the remote control's installation position, keep it so that the air flow is within the range shown in the following figure.

(1) Setting

① **If the air conditioning unit is running, press the ON/OFF button to stop.**

The installation location setting cannot be made while the unit is running.

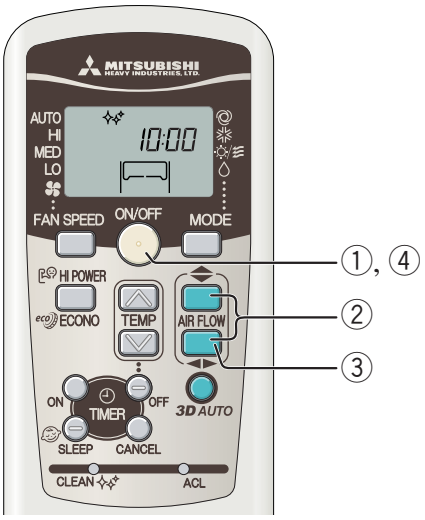
② **Press the AIR FLOW ⬍ (UP/DOWN) button and the AIRFLOW ⬌ (LEFT/RIGHT) button together for 5 seconds or more.**

The installation location display illuminates.

③ **Setting the air-conditioning installation location.**

Press the AIR FLOW ⬌ (LEFT/RIGHT) button and adjust to the desired location.

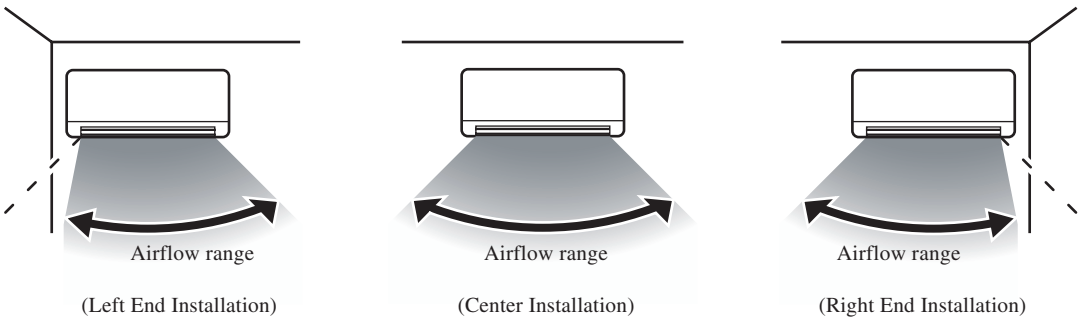
Each time the AIR FLOW ⬌ (LEFT/RIGHT) button is pressed, the indicator is switched in the order of:



④ **Press the ON/OFF button.**

The air-conditioner's installation location is set.

Press within 60 seconds of setting the installation location (while the installation location setting display illuminates).



4.9 Outline of cooling operation

(1) Operation of major fanctinal components

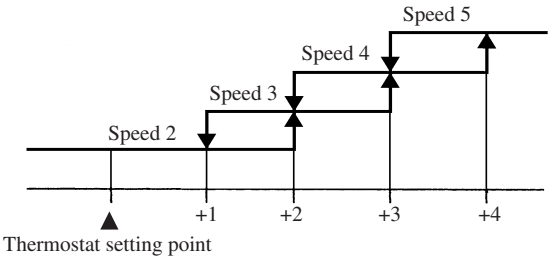
Item / Functional components	When the compressor command is OFF	When the compressor command is ON	When the compressor goes OFF due to an anomalous stop.
Indoor fan motor	ON	ON	OFF
Flap and louver	ON or OFF	ON or OFF	Stop position control
Display	Lights up	Lights up	Lights up or flashes
52C	OFF	ON	OFF
Outdoor fan motor	OFF	ON	OFF

(2) Fan speed switching

Fan speed switching / Flow control	AUTO	HIGH	MED	LOW
Swing flap or louver	Auto fan control	Speed 5	Speed 3	Speed 2
Swing stop		Speed 5	Speed 3	Speed 2

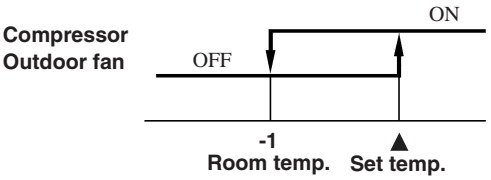
(a) Auto fan control

The indoor fan is automatically controlled in accordance with the difference between the room temperature (detected by the room temperature sensor) and the termostat setting as shown below.



(3) Thermostat operation

The compressor and outdoor fan and turned on and off as shown below according to the temperature setting.



(4) HIGH POWER operation (“HI POWER” button on the remote control : ON)

The following operation is performed for 15 minutes without relation to the set temperature or fan speed setting.

Indoor unit fan	Speed 6 fixed
Outdoor unit fan	ON
Compressor	ON

Notes (1) Room temperature is not adjusted during the HIGH POWER operation.
(2) Protective functions will actuate with priority even during the HIGH POWER operation.

(5) ECONOMY operation (“ECONO” button on the remote control : ON)

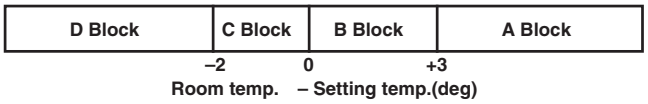
The set temperature changes as shown at right, and the indoor unit fan speed is set on speed 2.

Running time	Set temperature compensation
Running start ~ 1 hour	Set temperature +0.5
1~2 hours	Set temperature +1.0
2 hours ~	Set temperature +1.5

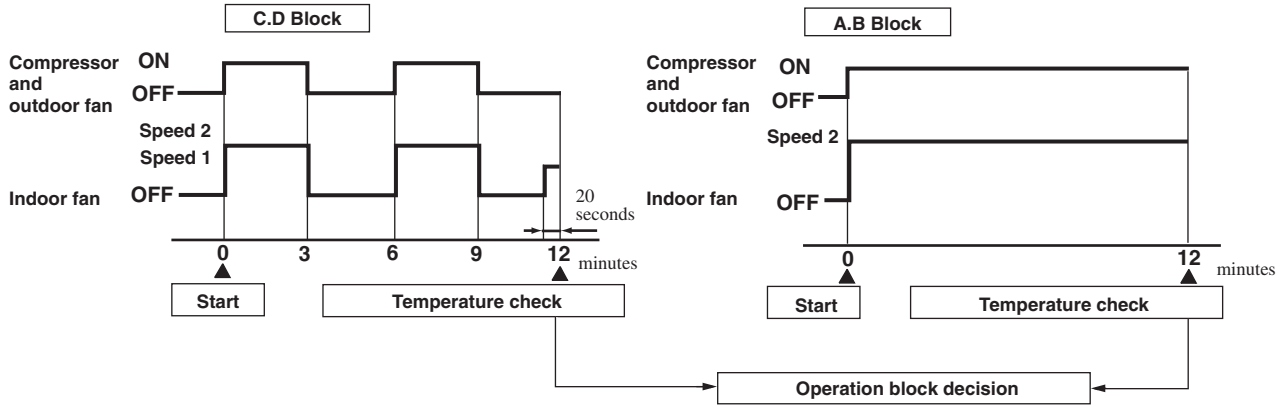
4.10 Outline of dehumidifying operation

(1) Choose the appropriate operation block area by the difference between room temperature and thermostat setting temperature as shown below.

- **Operation block area**



(2) Start up operation

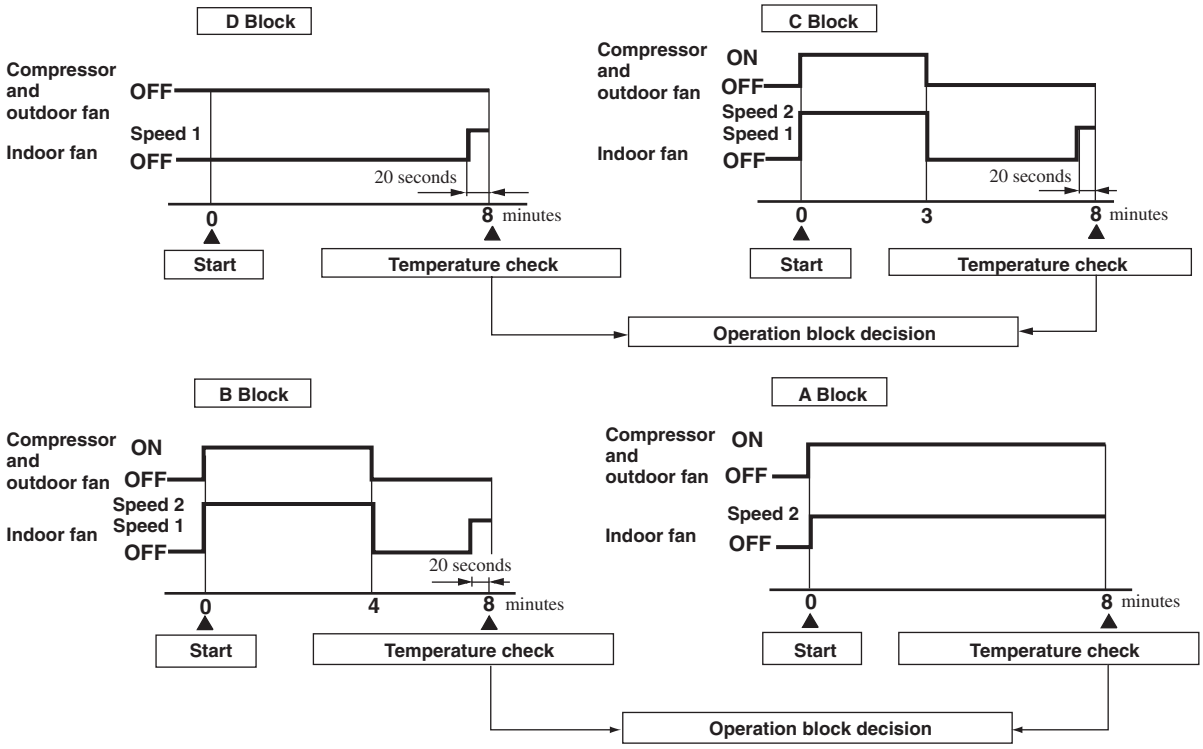


Note (1) Thermostat operation is performed in A, B Block. When compressor and indoor fan stop by thermostat operation within 12 minutes from start, temperature check is performed by operating indoor fan at speed 1 for 20 seconds before finishing 12 minutes and allowing decision of next operation block.

(3) DRY operation

After finishing start up operation described in (2) above, thermal dry operation is performed at 8 minutes intervals, according to the difference between room temperature and thermostat setting temperature as shown below.

Beside, 1 cycle of this operating time consists of 8 minutes, 7 cycle operation is performed then.



(4) ECONOMY operation (“ECONO” button on the remote control : ON)

The set temperature changes as shown at right, and the indoor unit fan speed is set on speed 2.

Running time	Set temperature compensation
Running start ~ 1 hour	Set temperature +0.5
1~2 hours	Set temperature +1.0
2 hours ~	Set temperature +1.5

4.11 Outline of automatic operation

(1) Determination of operation mode

The blow operation of the indoor fan is carried out at the 1st speed for 20 seconds and the room temperature is checked to determine the operation mode automatically. (When the unit is operated by the turn-on timer, the blow operation is not carried out.)

	Room temperature<26°C	26°C≦Room temperature
Operation mode	Dry	Cooling

(2) Within 30 minutes after either auto or manual operation stops, if auto operation is started, or if you switch to auto operation during manual operation, the system runs in the previous operation mode.

(3) The temperature is checked 1 time in 30 minutes after the start of operation, and if the judgment differs from the previous operation mode, the operation mode changes.

(4) Setting temperature can be adjusted within the following range. There is the relationship as shown below between the signals of the wireless remote control and the setting temperature.

		Signals of wireless remote control (Display)												
		–6	–5	–4	–3	–2	–1	±0	+1	+2	+3	+4	+5	+6
Setting temperature	Cooling	16	17	18	19	20	21	22	23	24	25	26	27	28
	Dehumidifying	17	18	19	20	21	22	23	24	25	26	27	28	29

4.12 Outline of fan operation

(1) Operation of major fanctional components

Functional components \ Fan speed switching	HIGH POWER	AUTO	HIGH	MED	LOW	ECONOMY
52C	OFF					
Indoor fan motor	Speed 6	Speed 5	Speed 4	Speed 3	Speed 2	Speed 1
Outdoor fan motor	OFF					
Flap and louver	ON or OFF					

(2) HIGH POWER operation (“HI POWER” button on the remote control : ON)

The following operation is performed for 15 minutes without relation to the set fan speed.

Indoor unit fan	Speed 6 fixed
Outdoor unit fan	OFF
Compressor	OFF

Note (1) Protective functions will actuate with priority even during the HIGH POWER operation.

4.13 Outline of clean operation

COOL,DRY,AUTO (COOL,DRY); after operation has stopped, the moisture inside the dryer air conditioner, controls the production of fungus etc.

(1) Operating condition

‘Clean’ is switched ON, when the air conditioner receives a STOP signal.

(2) Detail of operation

Compressor	OFF
Indoor fan motor	Speed 1
Outdoor fan motor	OFF
Flap and louver	Fully closed

(3) Reset condition

When control finishes 120 minutes after the Clean operation starts. When the stop signal is received from the remote control.

4.14 Protective control function

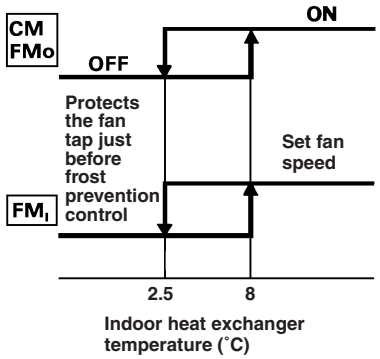
(1) Frost prevention for indoor heat exchanger [Preventing frost accumulation on the indoor heat exchanger]

During the Cooling or Dry operation in low room air temp. condition, evaporating temperature will decrease and consequently indoor heat exchanger sometimes gets clogged with frost (or ice).

In order to prevent this trouble, compressor is stopped by under mentioned condition by indoor heat exchanger sensor (Th_2) and timer (built into microcomputer circuit) functions.

Also indoor fan is changed over to protects the fan tap just before frost prevention control.

CM, FM_O stoppage condition	CM, FM_O re-starting condition
① Temperature of heat exchanger is 2.5˚C or lower. ② As least 3 minutes has passed since the compressor started.	① Temperature of heat exchanger is 8˚C or higher.



(2) Three-minute forced operation

When the compressor begins operating the thermal operation is not effective for 3 minutes, so operation continues as is in the operation mode. (After 3 minutes has passed the thermal operation is effective.)

However, stopping the compressor via a stop signal or protection control has priority.

(3) Self diagnosis function

When something abnormal happens on the outdoor unit, indoor unit fan motor and each sensor (heat exchanger, room temperature), it will be indicated by flashing lights.

(a) Abnormality of outdoor unit: When the indoor heat exchanger temperature does not fall to 25°C or below for 40 minutes after 5 minutes have elapsed since the compressor operation start, the abnormality stop occurs. (The timer light flashes 2 times.)

(b) Abnormality of indoor fan motor: The indoor fan motor revolves at a rate under 300 rpm for 30 seconds or longer, the RUN light will flash.

(c) Abnormality of heat exchanger sensor: RUN light will flashing when the input temperature of the heat exchanger sensor measures less than –20°C for more than 15 seconds with the air conditioner "OFF". (will not flashing during operation)

(d) Abnormality room temperature sensor: RUN light will flashing when the input temperature of the room temperature sensor measures less than –20°C for more than 15 seconds with the air conditioner "OFF". (will not flashing during operation)

Note (1) If the above abnormalities happen concurrently, the light will flashing in the order of item number (a) through (d) above.

5 APPLICATION DATA

SAFETY PRECAUTIONS

- Please read these "Safety Precautions" first then accurately execute the installation work.
- Though the precautionary points indicated herein are divided under two headings, ⚠WARNING and ⚠CAUTION, those points which are related to the strong possibility of an installation done in error resulting in death or serious injury are listed in the ⚠WARNING section. However, there is also a possibility of serious consequences in relationship to the points listed in the ⚠CAUTION section as well. In either case, important safety related information is indicated, so by all means, properly observe all that is mentioned.
- After completing the installation, along with confirming that no abnormalities were seen from the operation tests, please explain operating methods as well as maintenance methods to the user (customer) of this equipment, based on the owner's manual. Moreover, ask the customer to keep this sheet together with the owner's manual.

⚠ WARNING

- To disconnect the appliance from the mains supply this appliance must be connected to the mains by means of a circuit breaker or a switch (use a recognized 20A) with a contact separation of at least 3mm.
- The appliance shall be installed in accordance with national wiring regulations.
- This system should be applied to places as households, residences and the like. Application to inferior environment such as engineering shop could cause equipment malfunction.
- Please entrust installation to either the company which sold you the equipment or to a professional contractor. Defects from improper installations can be the cause of water leakage, electric shocks and fires.
- Execute the installation accurately, based on following the installation manual. Again, improper installations can result in water leakage, electric shocks and fires.
- For installation, confirm that the installation site can sufficiently support heavy weight. When strength is insufficient, injury can result from a falling of the unit.
- For electrical work, please see that a licensed electrician executes the work while following the safety standards related to electrical equipment, and local regulations as well as the installation instructions, and that only exclusive use circuits are used.
  Insufficient power source circuit capacity and defective installment execution can be the cause of electric shocks and fires.
- Accurately connect wiring using the proper cable, and insure that the external force of the cable is not conducted to the terminal connection part, through properly securing it improper connection or securing can result in heat generation or fire.
- Take care that wiring does not rise upward, and accurately install the lid/service panel.It's improper installation can also result heat generation or fire.
- When setting up or moving the location of the air conditioner, do not mix air etc. or anything other than the designated refrigerant (R22) within the refrigeration cycle.
  Rupture and injury caused by abnormal high pressure can result from such mixing.
- Always use accessory parts and authorized parts for installation construction. Using parts not authorized by this company can result in water leakage, electric shock, fire and refrigerant leakage.
- Ventilate the work area when refrigerant leaks during the operation.
  Coming in contact with fire, refrigerant could generate toxic gas.
- Confirm after the foundation construction work that refrigerant does not leak.
  If coming in contact with fire of a fan heater, a stove or movable cooking stove, etc., refrigerant leaking in the room could generate toxic gas.

⚠ CAUTION

- Execute proper grounding. Do not connect the ground wire to a gas pipe, water pipe, lightning rod or a telephone ground wire.
  Improper placement of ground wires can result in electric shock.
- The installation of an earth leakage breaker is necessary depending on the established location of the unit.
  No installing an earth leakage breaker may result in electric shock.
- Do not install the unit where there is a concern about leakage of combustible gas.
  The rare even of leaked gas collecting around the unit could result in an outbreak of fire.
- For the drain pipe, follow the installation manual to insure that it allows proper drainage and thermally insulate it to prevent condensation. Inadequate plumbing can result in water leakage and water damage to interior items.
- Install the outdoor unit so that the aluminum fins on the air heat exchanger cannot be touched. Failure to observe this may result in injury.
- Do not place objects near the outdoor unit or allow leaves to gather around the unit. If there are objects or leaves around the outdoor unit, small animals may enter unit and contact electrical parts resulting in break down, emission of smoke or flame.

5.1 Selection of location for installation

(1) Indoor unit

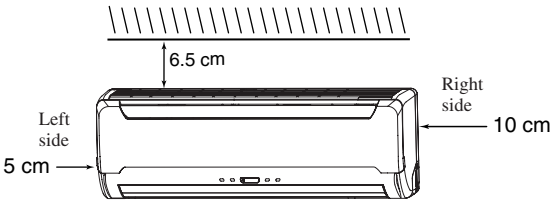
(a) Where there is no obstructions to the air flow and where the cooled air can be evenly distributed.

(b) A solid place where the unit or the wall will not vibrate.

(c) A place where there will be enough space for servicing. (Where space mentioned right can be secured)

(d) Where wiring and the piping work will be easy to conduct.

(e) The place where receiving part is not exposed to the direct rays of the sun or the strong rays of the street lighting.



(f) A place where it can be easily drained.

(g) A place separated at least 1m away from the television or the radio. (To prevent interfence to images and sounds.)

(2) Outdoor unit

(a) A place where good air circulation can be obtained and where rain, snow or sunshine will not directly strike the unit.

(b) A place where discharged hot air or unit's operating sound will not be a nuisance to the neighborhood.

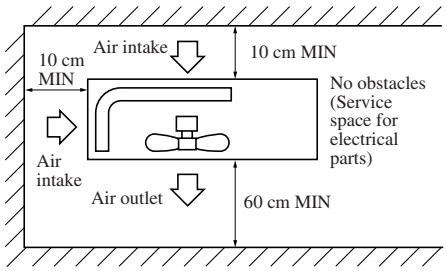
(c) A place where servicing space can be secured.

(d) A place where vibration will not be enlarged.

* Avoid installing in the following places.

- A place near the bedroom and the like, so that the operation noise will cause no trouble.
- A place where there is possibility of flammable gas leakage.
- A place exposed to strong wind.

(e) Do not install the unit near the seaside, or where there is possibility of chlorine gas generation.

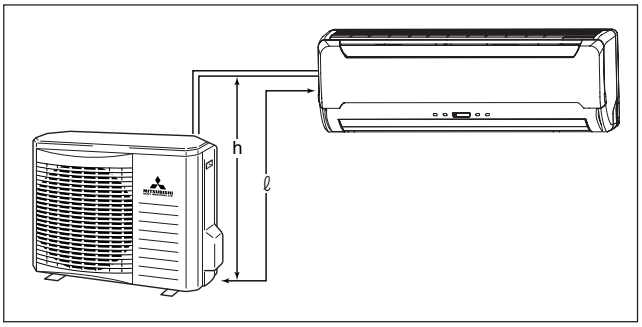


Notes (1) Blowing out port and suction port on the back side of the unit can be installed at a distance of 10cm from walls.
(In case the barrier is 1.2m or above in height, or is overhead, the sufficient space between the unit and wall shall be secured.)

(2) When the unit is installed, the space of the following dimension and above shall be secured.

(3) Limitations for one way piping length and vertical height difference.

Item \ Model		All models
One way piping length (ℓ)		15 m
Vertical height difference (h)	Outdoor unit is lower	5 m
	Outdoor unit is higher	5 m

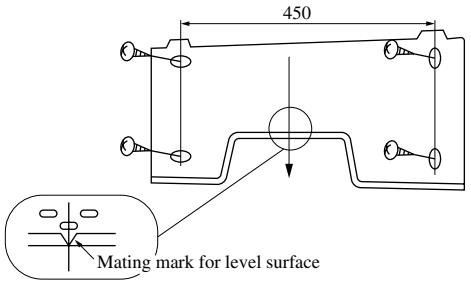


5.2 Installation of indoor unit

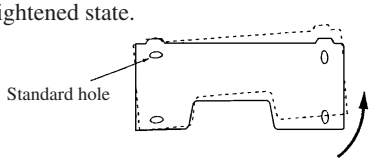
(1) Installation of installation board

(a) Fixing of installation board

Look for the inside wall structures (Intersediate support or pillar and firaly install the unit after level surface has been checked.)



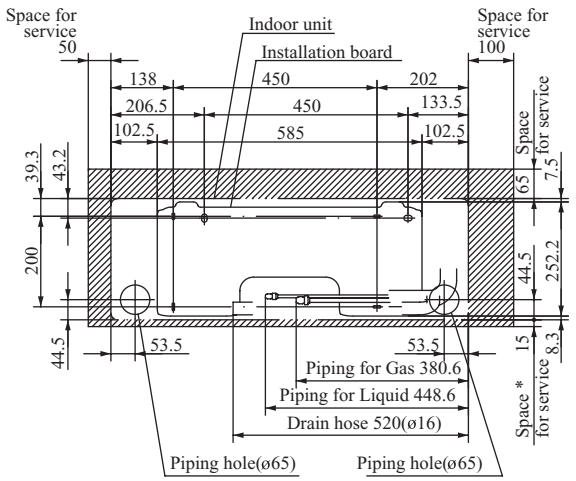
Adjustment of the installation board in the horizontal direction is to be conducted with four screws in a temporary tightened state.



Adjust so that board will be level by turning the board with the standard hole as the center.

INSTALLATION SPACE (INDOOR UNIT) (FRONT VIEW)

Unit : mm

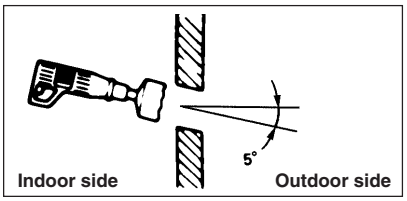


* Leave extra space on the right side to enable removal of the lid screw.

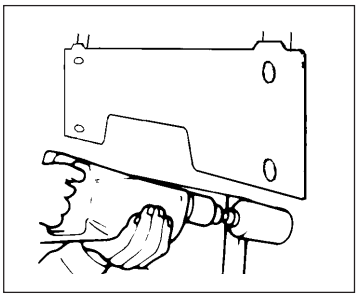
(2) Drilling of holes and fixture sleeve (Option Parts)

When drilling the wall that contains a metal lath, wire lath or metal plate, be sure to use pipe hole sleeve sold separately.

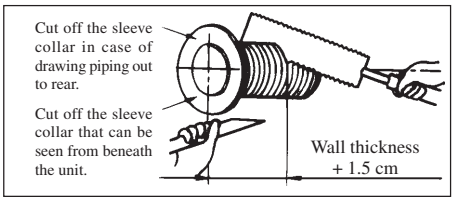
(a) Drill a hole with ø65 whole core drill



Note (1) Drill a hole with incline of 5 degree from indoor side to outdoor side.

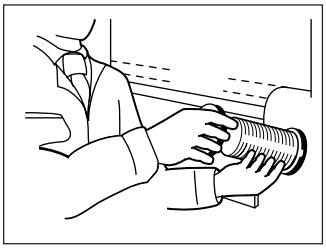


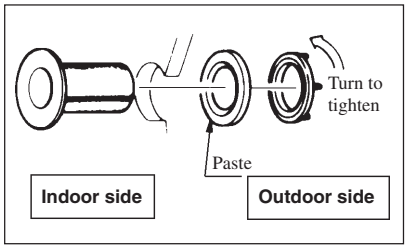
(b) Adjusting sleeve length

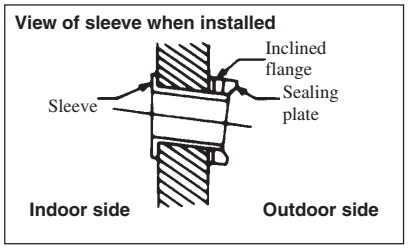

Cut off the sleeve collar in case of drawing piping out to rear.
Cut off the sleeve collar that can be seen from beneath the unit.
Wall thickness + 1.5 cm

(c) Install the sleeve

(Inserting sleeve) (*Sleeve + *Inclined + *Sealing plate)







(3) Preparation of indoor unit

(a) Mounting of connecting wires

1) Remove the lid.
2) Remove the wiring clamp.
3) Connect the connecting wire securely to the terminal block.

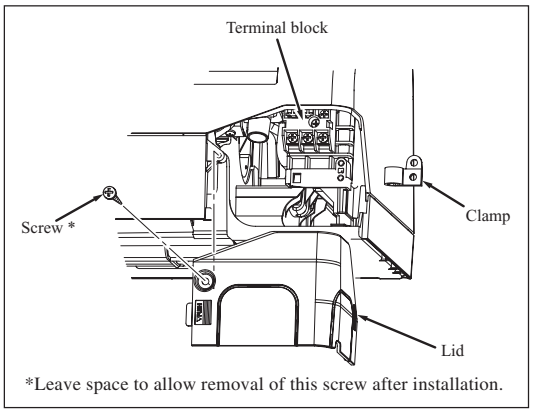
Use cable for interconnection wiring to avoid loosening of the wires.
CENELEC code for cables Required field cables.
H05RNR3G1.5 (Example) or 245IEC57

H	Harmonized cable type
05	300/500 volts
R	Natural-and/or synth. rubber wire insulation
N	Polychloroprene rubber conductors insulation
R	Standed core
4or5	Number of conductors
G	One conductor of the cables is the earth conductor (yellow/green)
1.5	Section of copper wire (mm^2)

- Connect the connection wire securely to the terminal block. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
- Take care not to confuse the terminal numbers for indoor and outdoor connections.
- Affix the connection wire using the wiring clamp.

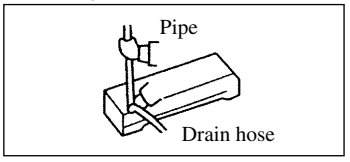
4) Fix the connecting wire by wiring clamp.
5) Attach the lid.
6) Close the air inlet panel.

1	**Brown**	For power supply, indoor outdoor
2	**Blue**	For power supply, indoor outdoor



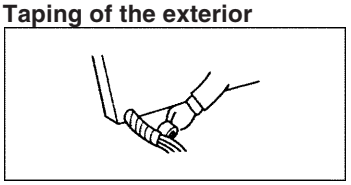
*Leave space to allow removal of this screw after installation.

(b) Shaping the pipe



- Hold the bottom of the pipe and change its direction before stretching it and shaping it.

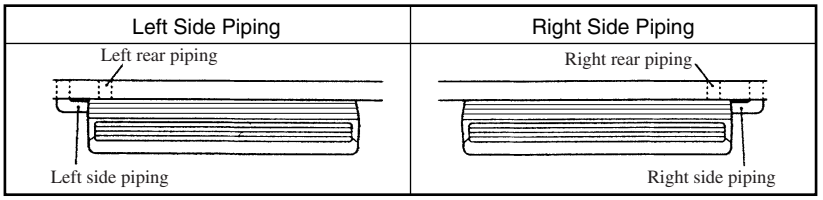
(c) Taping of the exterior



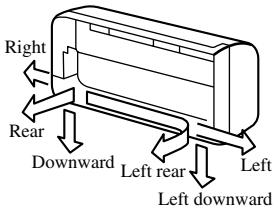
- Tape only the portion that runs through the wall. Always tape the crossover wires with the pipe.

(d) Cautions when piping from the left and the rear center of the unit

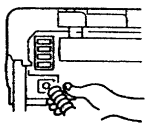
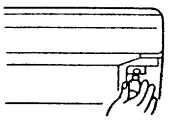
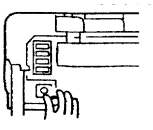
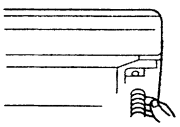
[Top View]



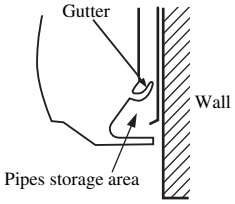
Piping is possible in the rear, left, left rear, left downward, right or downward direction.



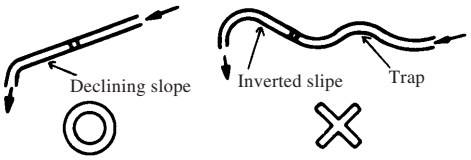
[Procedure for exchanging the drain hose]

1. Remove the drain hose.	2. Remove the drain cap.	3. Insert the drain cap.	4. Connect the drain hose.
			
• Loosen and remove the spring-type clamp.	• Remove with your hand or a pair of pliers.	• Use a hexagonal wrench to correctly insert the drain cap which was removed in 2. Caution: Be careful because if the cap is not inserted property, water leak may occur.	• Loosen the spring-type clamp and securely insert the drain hose. Caution: Be careful because if the cap is not inserted properly, water leak may occur.

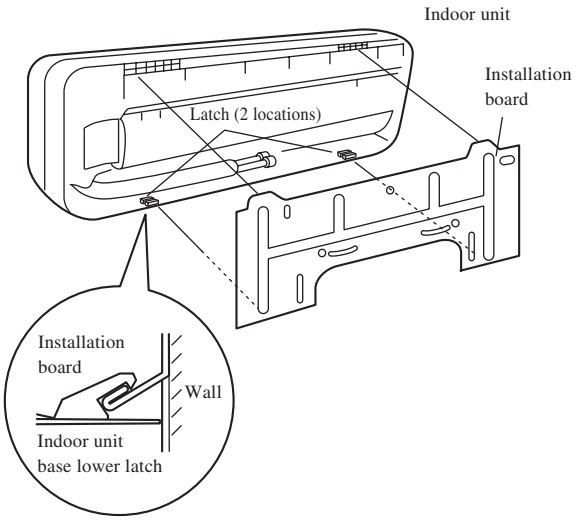
- Do not place the power supply cords above the gutter, because the air conditioner is structured in a way where condensation on the back side is collected in to the drain pan before drainage.

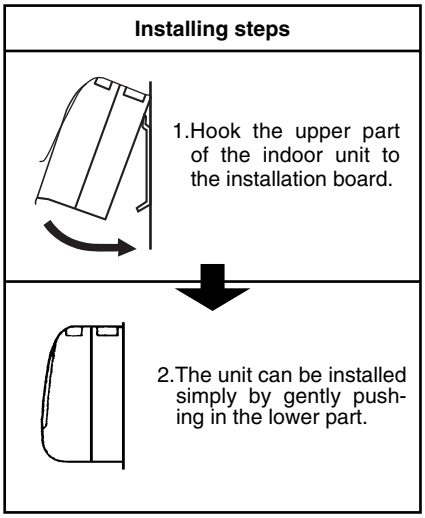


- Do not make traps in the drain hose line.



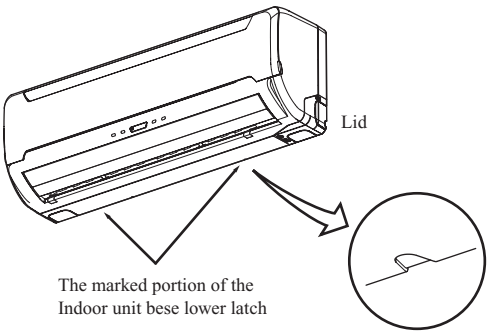
(e) Securing the indoor unit to the installation board




Installing steps
1.Hook the upper part of the indoor unit to the installation board.
2.The unit can be installed simply by gently pushing in the lower part.

- How to remove the indoor unit from the installation board

1) Push up at the marked portion of the indoor unit base lower latch, and slightly pull it toward you.
   (both right and left hand sides)
   (The indoor unit base lower latch can be removed from the installation board)
2) Push up the indoor unit upward. So the indoor unit will be removed from the installation board.



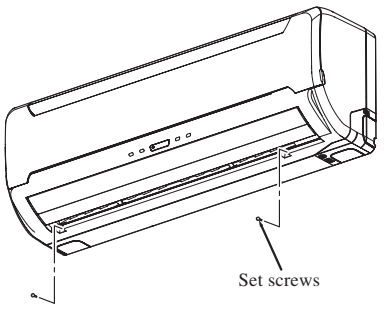
(4) Removal and installation of the front panel

(a) Removing

- Remove the 2 set screws.
- Move the lower part of the panel forward and push upwards to remove. (Remove the 3 latches in the upper section.)

(b) Fitting

- Do remove the air filter.
- Cover the body with the front panel.
- Push the circled portion at the front.
- Tighten the 2 set screws.
- Fit the air filter. Carry out in the above order.



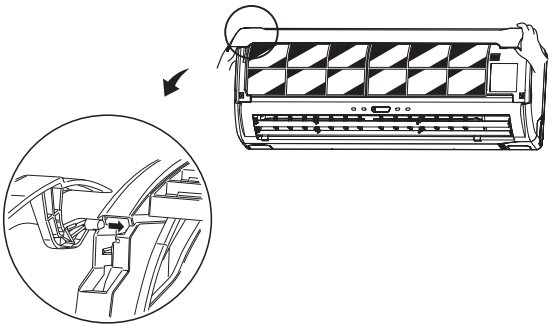
(5) Open/close and detachment/attachment of air inlet panel

(a) To open, pull the panel at both ends of lower part and release latches, then pull up the panel until you feel resistance. (The air inlet panel stops at approx. 60˚ open position.)

(b) To close, hold the panel at both ends of lower part to lower downward and push it slightly until the latch works, then push the center portion slightly.

(c) To remove, pull up the panel to the position shown in right illustration and pull it toward you.

(d) To install, insert the air inlet panel arm into the slot on the front panel from the position shown in right illustration, hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch works and further push the center portion slightly.

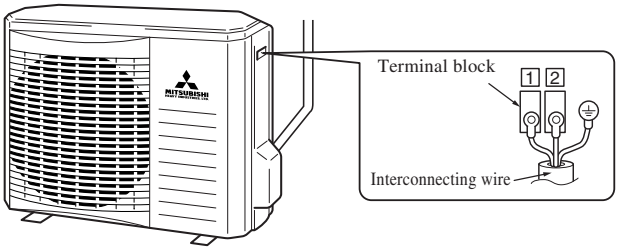


5.3 Installation of outdoor unit

(1) Make sure that the unit is stable in installation. Fix the unit to stable base.

(2) Perfrom wiring, making wire terminal numbers conform to terminal numbers of indoor unit terminal block.

1	**Brown**	For power supply, indoor outdoor
2	**Blue**	For power supply, indoor outdoor

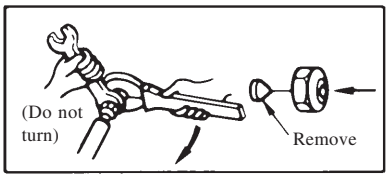


5.4 Connection of refrigerant pipings

(1) Preparation

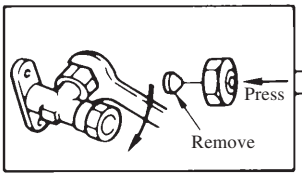
Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.

(a) Indoor unit side

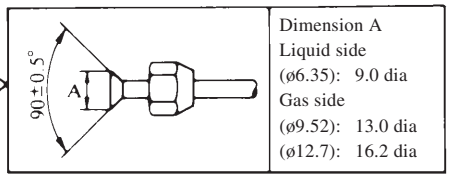


- Remove the flared nuts. (on both liquid and gas sides)

(b) Outdoor unit side



- Remove the flared nuts. (on both liquid and gas sides)

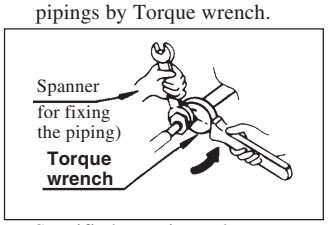


- Install the removed flared nuts to the pipes to be connected, then flare the pipes.

(2) Connection of refrigerant piping

(a) Indoor unit side

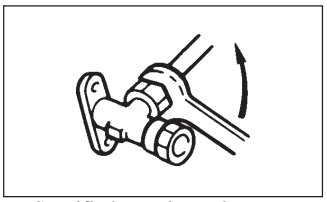
- Connect firmly gas and liquid side pipings by Torque wrench.



- Specified torquing value:
  Liquid side (ø6.35) : 14~18N·m (1.4~1.8kgf·m)
  Gas side (ø9.52) : 34~42N·m (3.4~4.2kgf·m)
  Gas side (ø12.7) : 49~61N·m (4.9~6.1kgf·m)

(b) Outdoor unit side

- Connect firmly gas and liquid side pipings by Torque wrench.



- Specified torquing value:
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  Gas side (ø9.52) : 34~42N·m (3.4~4.2kgf·m)
  Gas side (ø12.7) : 49~61N·m (4.9~6.1kgf·m)
- Use one more spanner to fix the valve.

- Always use a Torque wrench and back up spanner to tighten the flare nut.

(3) Air purge

(a) Tighten all flare nuts in the pipings both indoor and outside wall so as not to cause leak.

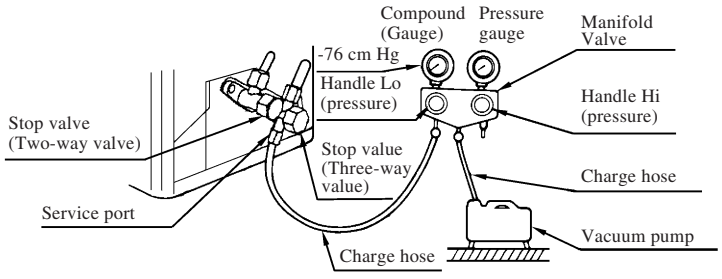
(b) Connect service valve, charge hose, manifold valve and vacuum pump as is illustrated below.

(c) Open manifold valve handle Lo to its full width, and perform vacuum or evacuation.
Continue the vacuum or evacuation operation for 15 minutes or more and check to see that the vacuum gauge reads – 0.1 MPa (– 76 cmHg).

(d) After completing vacuum operation, fully open service valve (Both gas and liquid sides) with hexagon headed wrench.

(e) Detach the charge hoses.

(f) Check for possible leakage of gas in the connection parts of both indoor and outdoor.



♦ Additional refrigerant charge

When refrigerant piping exceeds 7.5m conduct additional refrigerant charge after refrigerant sweeping.

7.5m over 15m:Additional charge amount per meter = 10g/m

[Example]

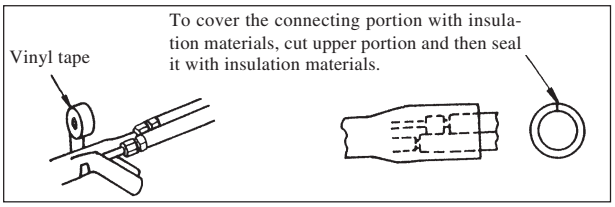
How much amount of additional charge for 15m piping?

(15 – 7.5)m × 10g/m=75g | 75g for additional charge |

(4) Insulation of connecting portion

(a) Cover the connection portion of the refrigerant piping with the pipe cover and seal them.

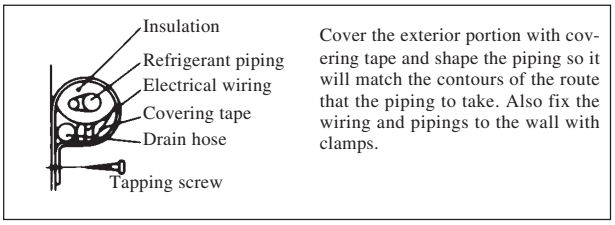
If neglecting to do so, moisture occurs on the piping and water will drip out.


To cover the connecting portion with insulation materials, cut upper portion and then seal it with insulation materials.
Vinyl tape

(b) Finishing and fixing

1) Tie up the piping with wrapping tape, and shape it so that it conforms to which the pipe is attached.

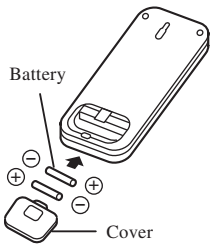
2) Fix them with clamps as right figure.


Insulation
Refrigerant piping
Electrical wiring
Covering tape
Drain hose
Tapping screw
Cover the exterior portion with covering tape and shape the piping so it will match the contours of the route that the piping to take. Also fix the wiring and pipings to the wall with clamps.

5.5 Installation of remote control switch

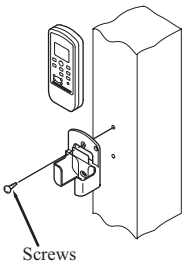
(1) Mounting method of battery

- Uncover the remote control switch, and mount the batteries [R03(AAA, Micro)×2 pieces] in the body regularly.
  (Fit the poles with the indication marks, ⊕ & ⊖ without fail)



(b) Fixing to pillar or wall

- Conventionally, operate the wireless remote control by holding in your hand.
- Avoid installing it on a clay wall etc.



5.6 Earthing work

- Earth work shall be carried out without fail in order to prevent electric shock and noise generation.
- The connection of the earth cable to the following substances causes dangerous failures, therefore it shall never be done.
  City water pipe, Town gas pipe, TV antenna, lightning conductor, telephone line, etc.

5.7 Test run

(1) Conduct trial run after confirming that there is no gas leaks.

(2) When conducting trial run set the remote control thermostat to continuous operation position. However when the power source is cut off or when the unit's operation switch is turned off or was turned to fan operation position, the unit will not go into operation in order to protect the compressor.

(3) Explain to the customer on the correct usage of the air conditioner in simple layman's terms.

(4) Make sure that drain flows properly.

(5) Standard operation data

(220V)

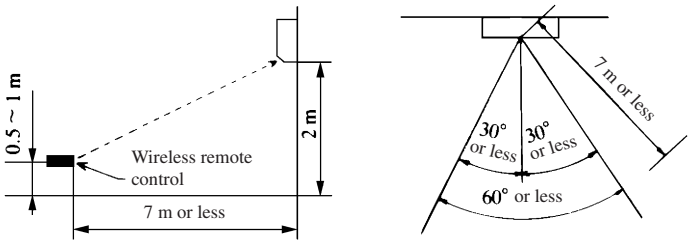
Item \ Model	SRK10CFV-4	SRK13CFV-4
Low pressure (MPa)	0.46~0.66	0.41~0.61
Temp. difference between return air and supply air (°C)	10~12	13~15
Running current (A)	3.4	4.9

Note (1) The data are measured at following conditions
Ambient air temperature
Indoor side: Cooling ... 27°C DB, 19°C WB
Outdoor side: Cooling ... 35°C DB, 24°C WB

5.8 Precautions for wireless remote control installation and operation

(1) Wireless remote control covers the following distances:

(a) When operating facing the air conditioner:

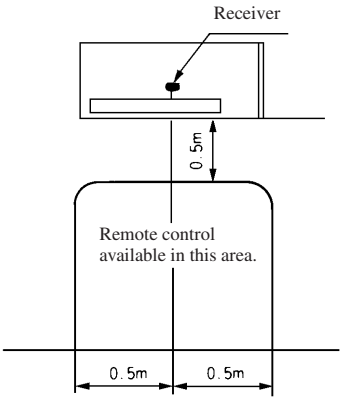


Notes (1) The remote control is correctly facing the sensing element of the air conditioner when being manipulated.
(2) The typical coverage is indicated (in the left illustration). It may be more or less depending on the installation.
(3) The coverage may be less or even nil. If the sensing element is exposed to strong light, such as direct sunlight, illumination, etc., or dust is deposited on it or it is used behind a curtain, etc.

If the distances exceed the area indicated above, be sure to check the receiver status.

(b) When manipulating the remote control mounted on a wall:

Make sure that it works normally (i.e., transmission/reception signal is audible) before mounting.

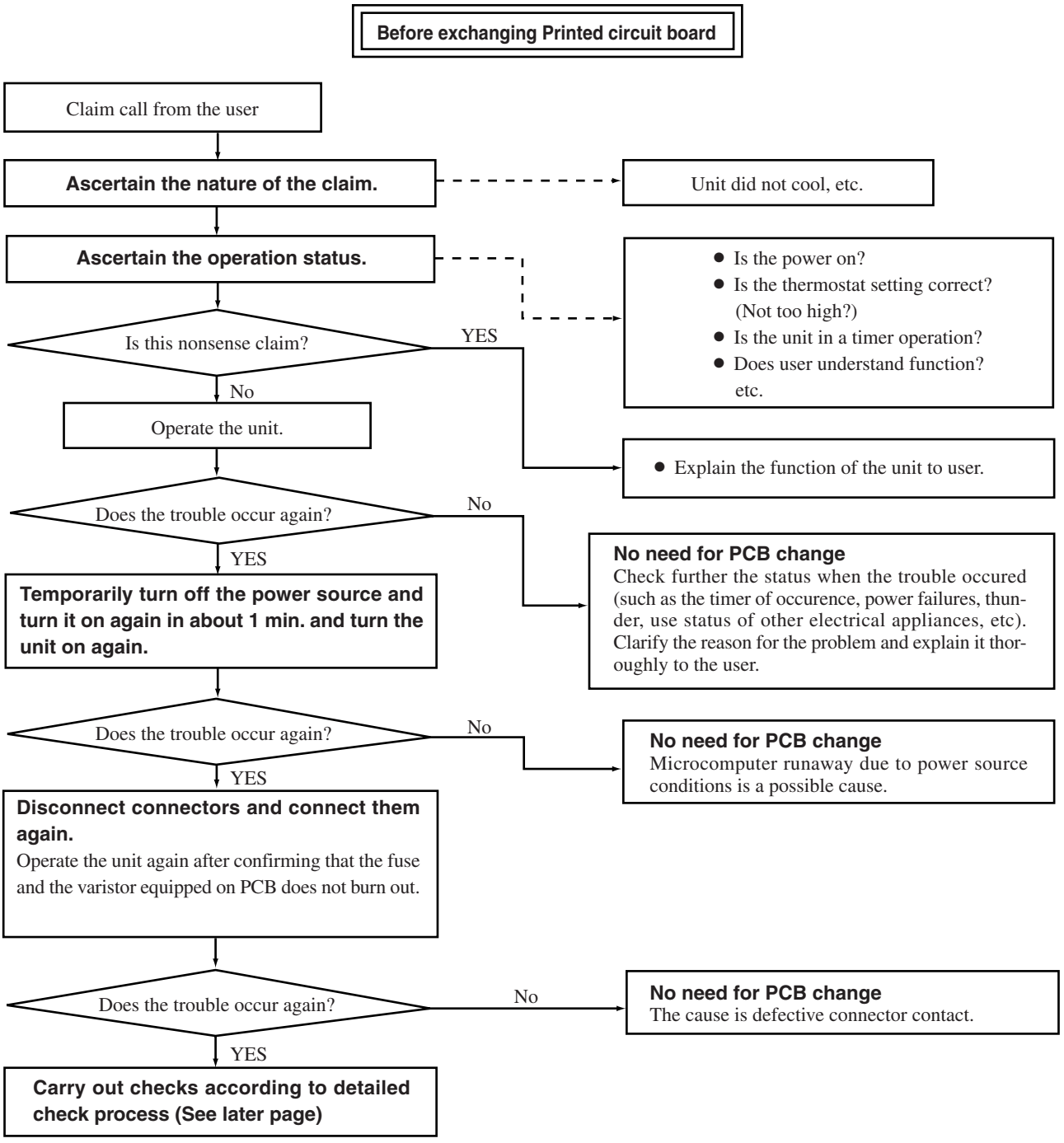


6 MAINTENANCE DATA

6.1 Trouble shooting

(1) Trouble shooting to be performed prior to exchanging PCB, (Printed circuit board) [Common to all models]

All the models described in this chapter are controlled by a microcomputer. When providing maintenance service to customers it is necessary to understand the function controlled by a microcomputer thoroughly, so as not to mistakenly identify correct operations as mis-operations. It is also necessary to perform the following simple checks before conducting detailed checks or exchanging printed circuit board.

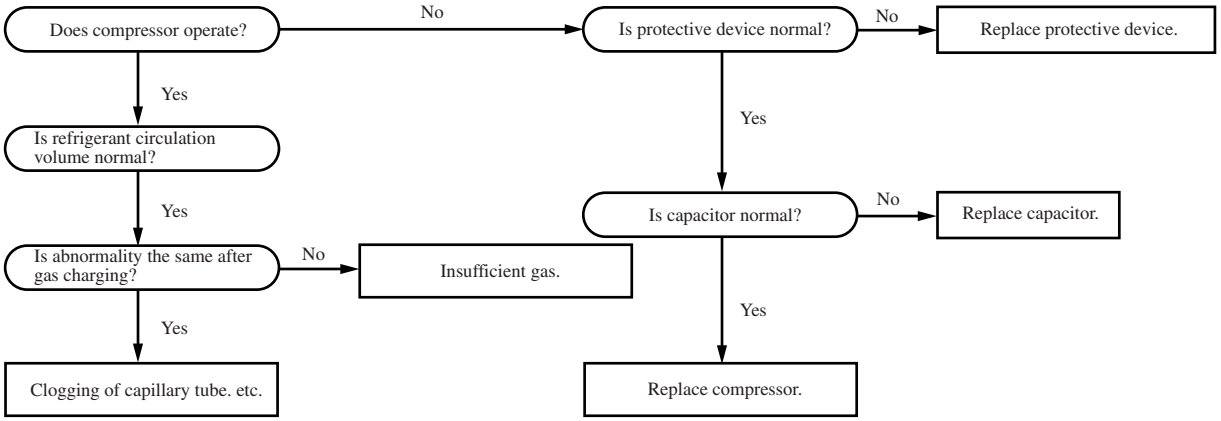

Before exchanging Printed circuit board
Claim call from the user
Ascertain the nature of the claim.
Unit did not cool, etc.
Ascertain the operation status.
● Is the power on?
● Is the thermostat setting correct? (Not too high?)
● Is the unit in a timer operation?
● Does user understand function? etc.
Is this nonsense claim?
YES
No
Operate the unit.
● Explain the function of the unit to user.
Does the trouble occur again?
No
YES
No need for PCB change
Check further the status when the trouble occured (such as the timer of occurence, power failures, thunder, use status of other electrical appliances, etc). Clarify the reason for the problem and explain it thoroughly to the user.
Temporarily turn off the power source and turn it on again in about 1 min. and turn the unit on again.
Does the trouble occur again?
No
YES
No need for PCB change
Microcomputer runaway due to power source conditions is a possible cause.
Disconnect connectors and connect them again.
Operate the unit again after confirming that the fuse and the varistor equipped on PCB does not burn out.
Does the trouble occur again?
No
No need for PCB change
The cause is defective connector contact.
YES
Carry out checks according to detailed check process (See later page)

(2) Indication of Self Diagnosis (Indoor unit)

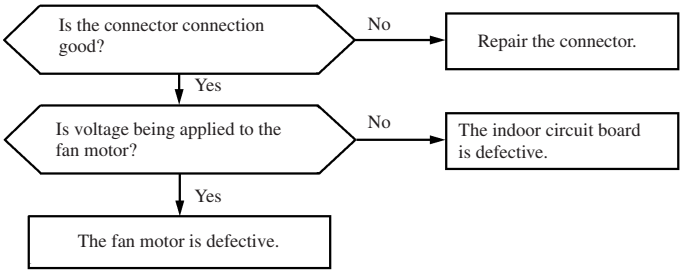
		Connect of Defect	Place of defect
TIMER light is lights continuously.	RUN light is flashing. (1 Time flash.)	Abnormality of heat exchanger sensor.	● Disconnection of heat exchanger sensor.
	RUN light is flashing. (2 Time flash.)	Abnormality of room temperature sensor.	● Disconnection of room temperature sensor.
	RUN light is flashing. (6 Time flash.)	Abnormality of indoor fan motor.	● Fan motor is defective. ● Printed circuit board is defective.
RUN light is lights continuously.	TIMER light is flashing. (2 Time flash.)	Abnormality of outdoor unit.	● Compressor is defective. ● Capacitor is defective. ● Gas is short.

(3) Troubleshooting

Abnormality of outdoor unit [Compressor malfunction of insufficient gas (refrigerant)]



Abnormality of indoor fan motor (Fan motor defective, printed circuit board defective)



Abnormality of sensor Disconnection of sensor and defective connection of connector

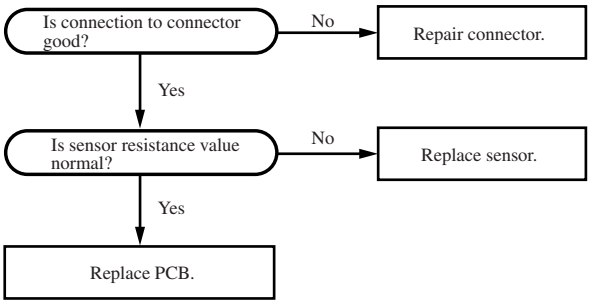
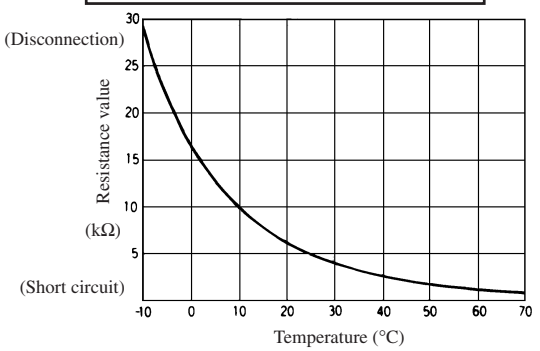
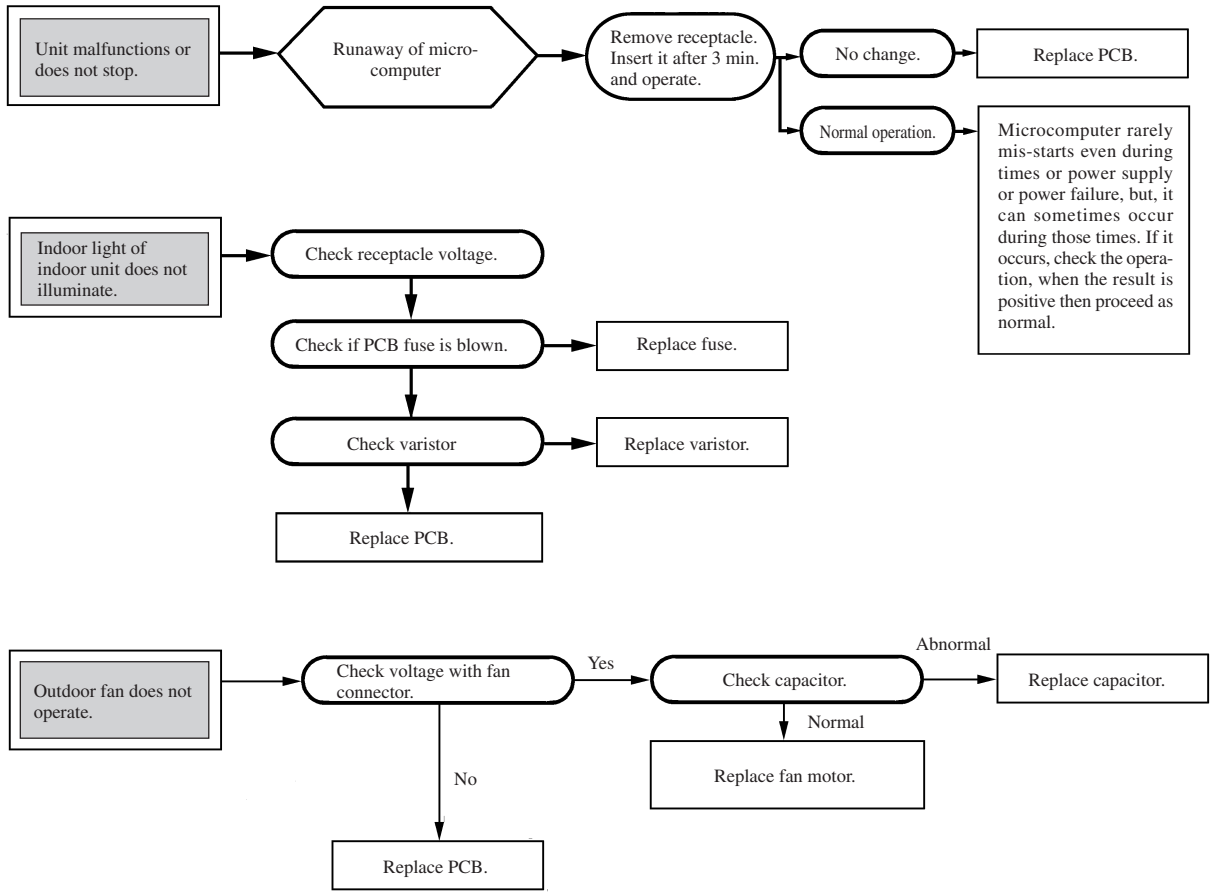


Chart for sensor temperature resistance characteristics



(4) Trouble Diagnostic Procedures

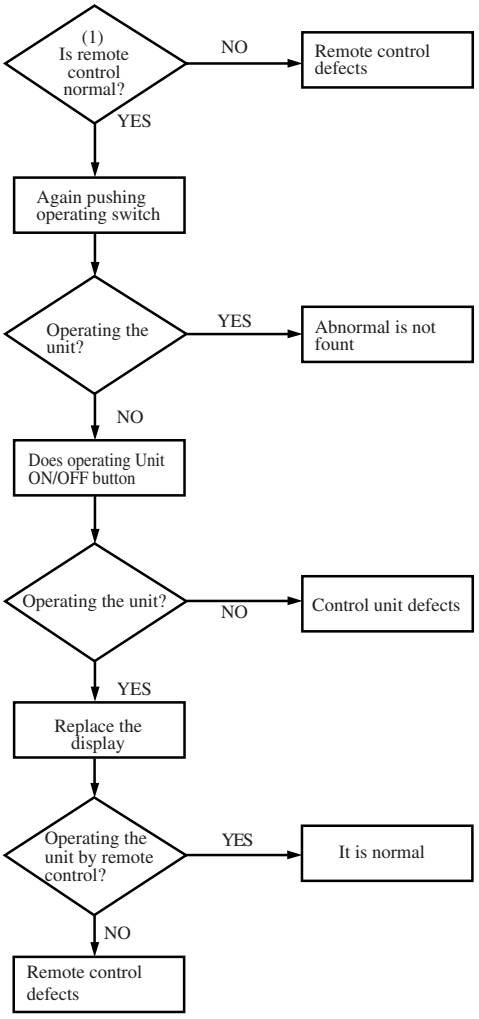

Unit malfunctions or does not stop.
Runaway of micro-computer
Remove receptacle. Insert it after 3 min. and operate.
No change.
Replace PCB.
Normal operation.
Microcomputer rarely mis-starts even during times or power supply or power failure, but, it can sometimes occur during those times. If it occurs, check the operation, when the result is positive then proceed as normal.
Indoor light of indoor unit does not illuminate.
Check receptacle voltage.
Check if PCB fuse is blown.
Replace fuse.
Check varistor
Replace varistor.
Replace PCB.
Outdoor fan does not operate.
Check voltage with fan connector.
Yes
Check capacitor.
Abnormal
Replace capacitor.
Normal
Replace fan motor.
No
Replace PCB.

(5) Trouble shooting chart for the room temperature sensor (Th_1), heat exchanger sensor (Th_2)

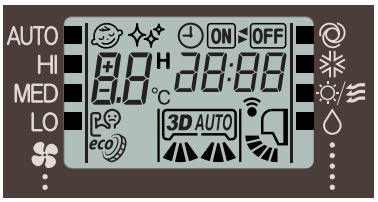
Unit	sensor	Operation	Function	
			Short circuit	Broken connection
Indoor unit	**Room temperature sensor (1) (Th_1) except for "continuous" thermal setting.**	**Cooling**	**Continuous Cooling operation** ● Cannot be turned ON/OFF by thermostat ● When FM_I is on. "AUTO" is continuously Hi	**Cooling will not operate** ● FM_I : continuous operation ● CM,FM_O: stopped
	Heat exchanger sensor (Th_2)	**Cooling**	Cooling will not operate.	**Cooling will operate** ● Heat exchanger frost preventer begins to operate ● Cools alternately for 10 minutes, stopping for 3 minutes.

Note (1) When the room temperature sensor (Th_1) will not operate normally. Cooling operation may be run continuously by putting the thermostat setting on "CONTINUOUS"

(6) How to make sure of remote control



Note (1) How to check the remote control.
(a) Press the reset switch of remote control.
(b) If the almost normal if entire display of remote control is shown after / indication.



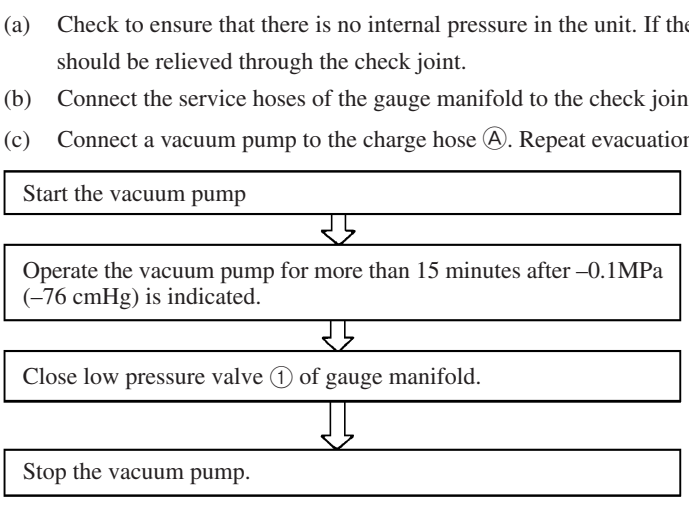
6.2 Servicing

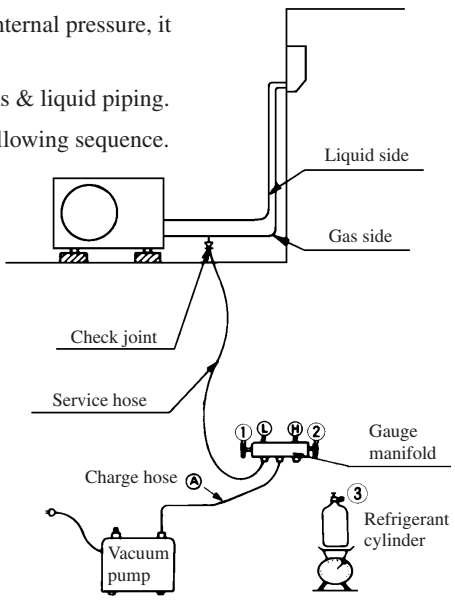
(1) Evacuation

The evacuation is an procedure to purge impurities ..... noncondensable gas, air, moisture from the refrigerant equipment by using a vacuum pump. Since the refrigerant R22 is very insoluble in water, even a small amount of moisture left in the refrigerant equipment will freeze, causing what is called water clogging.

- **Evacuation procedure**

(a) Check to ensure that there is no internal pressure in the unit. If there is an internal pressure, it should be relieved through the check joint.
(b) Connect the service hoses of the gauge manifold to the check joint of the gas & liquid piping.
(c) Connect a vacuum pump to the charge hose Ⓐ. Repeat evacuation in the following sequence.


Start the vacuum pump
Operate the vacuum pump for more than 15 minutes after –0.1MPa (–76 cmHg) is indicated.
Close low pressure valve ① of gauge manifold.
Stop the vacuum pump.



Notes (1) Do not use the refrigerant pressure to expel air.
(2) Do not use the compressor for evacuation.
(3) Do not operate the compressor in the vacuum condition.

(2) Refrigerant charge

(a) Discharge refrigerant entirely from the unit and evacuate the unit.
Note: Addition of refrigerant without evacuation is unreasonable, because it will result in low charge or overcharge.

(b) Keep the gauge manifold and connect a refrigerant cylinder to the unit.

(c) Record the weight of the refrigerant cylinder on the balance. This is necessary for making sure of the charged refrigerant amount.

(d) Purge air from the charge hose Ⓐ.
Firstly loose the connecting portion of the charge hose Ⓐ at the gauge manihold side and open the valve ③ for a few seconds, and then immediately retighten it after observing that gas is blow out from the loosened portion.

(e) Open the valve ① and ③ after discharging air from the charge hose Ⓐ, then the gas refrigerant begins flowing from the cylinder into the unit. Be sure to erect the refrigerant cylinder upright to let gas refrigerant flow into the unit.

(f) When refrigerant has been charged into the system to some extent, refrigerant flow becomes stagnant, when that happens, start the compressor in cooling cycle until the unit is filled with gas to the specified weight.

(g) Making sure of the refrigerant amount, close the valve ③.

(h) Disconnect the charge hose from the unit. Cover the valve ports of the refrigerant piping with caps and tighten them securely.

(i) Check for gas leakage applying a gas leak detector along the piping line.

(j) Start the air conditioner and make sure of its operating condition ..... high side and low side pressures and temperature difference between return air and supply air.

PARTS LIST

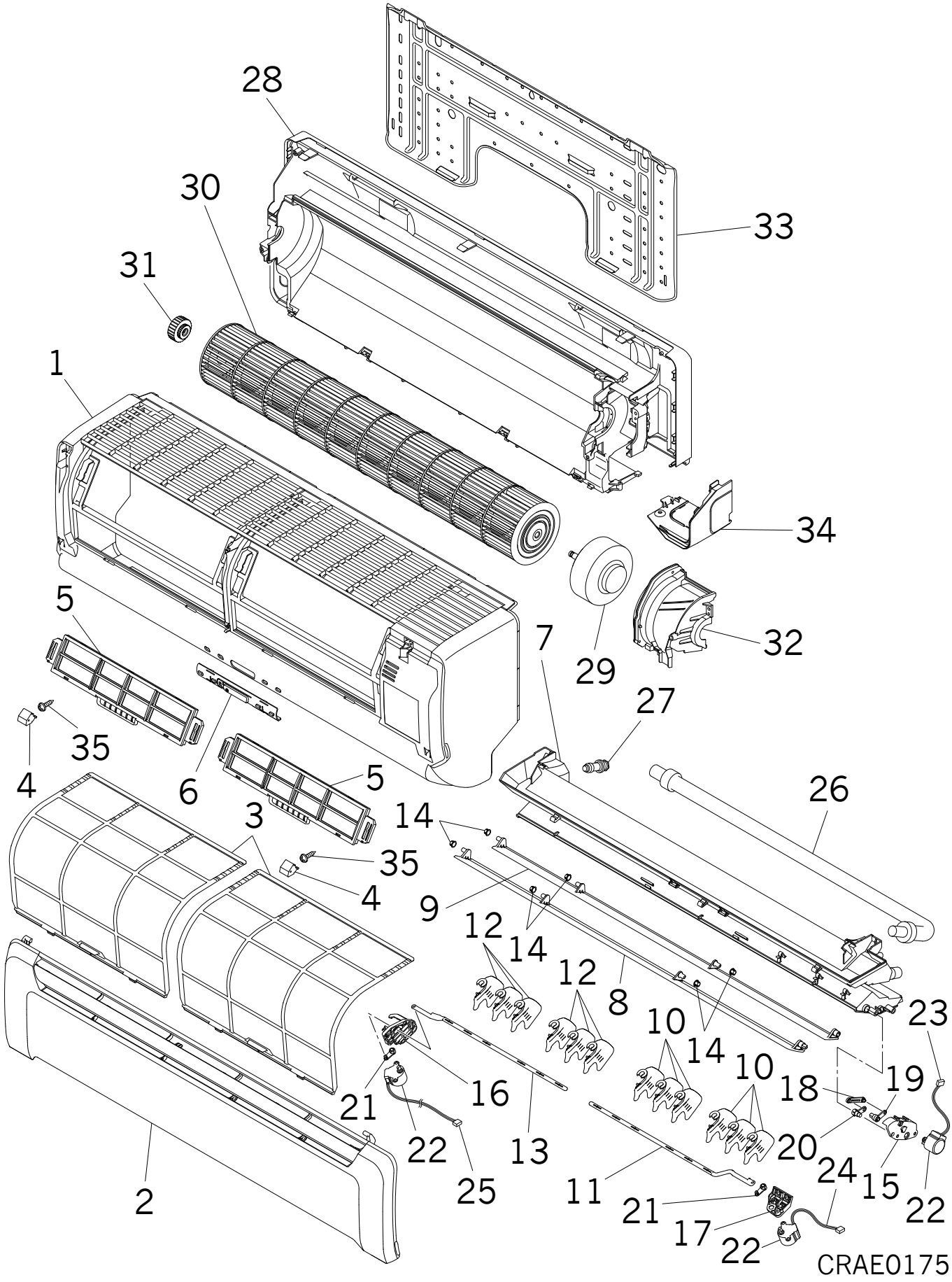
INDOOR UNIT

SRK10CFV-4, SRK13CFV-4

OUTDOOR UNIT

SRC10CFV-4, SRC13CFV-4

PANEL & FAN ASSY

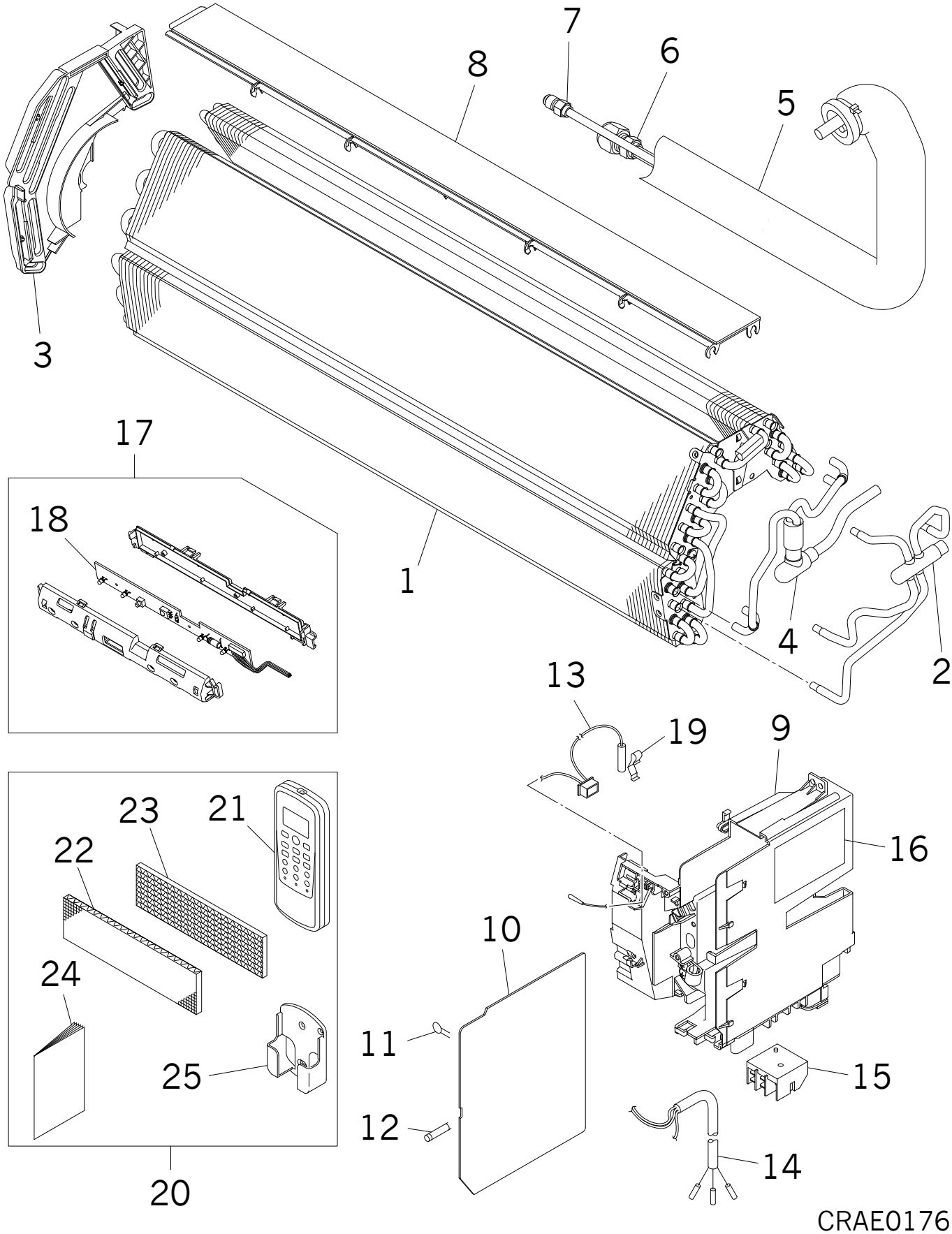


SRK10CFV-4

END ITEM NO. : RWA002F050D

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1-6	RKX 102A 001B	PANEL ASSY,FRONT	1			1	1	1	2	
1	RKX 122A 001B	PANEL,FRONT	1							
2	RKX 435A 004	PANEL ASSY,AIR IN	1			1	1	2	3	
3	RKX 437A 001	FILTER,AIR	2			1	1	1	2	W315×H294.3(t2)
4	RKX 129A 013	CAP	2							
5	RKX 129A 014	HOLDER,FILTER	2			1	1	1	2	
6	RKX 133A 001	PLATE,ORNAMENT	1			1	1	1	2	
7-27	RKX 435A 002	GRILLE ASSY,AIR OUT	1			1	1	2	3	
7	RKX 435A 003	GRILLE,AIR OUTLET	1							
8	RKX 436A 001	FLAP(A)	1							**UPPER**
9	RKX 436A 002	FLAP(B)	1							**LOWER**
10･11	RKX 436A 003	LOUVER ASSY(R)	1			1	1	2	2	
10	RKX 436A 005	LOUVER	6							
11	RKX 129A 008	PLATE,CONNECTING(R)	1							
12･13	RKX 436A 004	LOUVER ASSY(L)	1			1	1	2	2	
12	RKX 436A 005	LOUVER	6							
13	RKX 129A 009	PLATE,CONNECTING(L)	1							
14	RKW 935C 200	COLLAR	6							
15	RKX 129A 010	BRACKET,MOTOR(A)	1			1	1	1	2	
16	RKX 129A 011	BRACKET,MOTOR(B)	1			1	1	1	2	
17	RKX 129A 012	BRACKET,MOTOR(C)	1			1	1	1	2	
18	RKX 144A 001	LINK	1			1	1	1	2	
19	RKX 144A 002	CRANK(A)	1			1	1	1	2	
20	RKX 144A 003	CRANK(B)	1			1	1	1	2	
21	RKW 144A 204	CRANK(C)	2			1	1	1	2	
22	SSA 512T 052	MOTOR,STEPPING	3			1	1	1	2	FOR FLAP/LOUVER(R,L)
23	RKS 504A 100G	HARNESS ASSY	1			1	1	1	2	FOR FLAP
24	RKS 504A 100	HARNESS ASSY	1			1	1	1	2	FOR LOUVER(R)
25	RKS 504A 100L	HARNESS ASSY	1			1	1	1	2	FOR LOUVER(L)
26	SSA 423A 094	HOSE,DRAIN	1							
27	SSA 326A 047	PLUG	1							
28	RKX 111A 001	BASE ASSY	1			1	1	1	2	
29	SSA 511J 218	MOTOR,AC	1			1	1	1	2	FOR IMPELLER
30	SSA 431G 044	IMPELLER	1			1	1	2	4	
31	SSA 923C 114	BEARING,PLANE	1			1	1	1	2	
32	RKX 129A 005	COVER(MOTOR)	1			1	1	1	2	
33	RKX 032A 001	PLATE,INSTALLATION	1			1	1	1	2	
34	RKX 132A 001A	LID	1			1	1	2	4	
35	SSA 913A 007A	SCREW,TAP	4							4×14

HEAT EXCH. & CONTROL

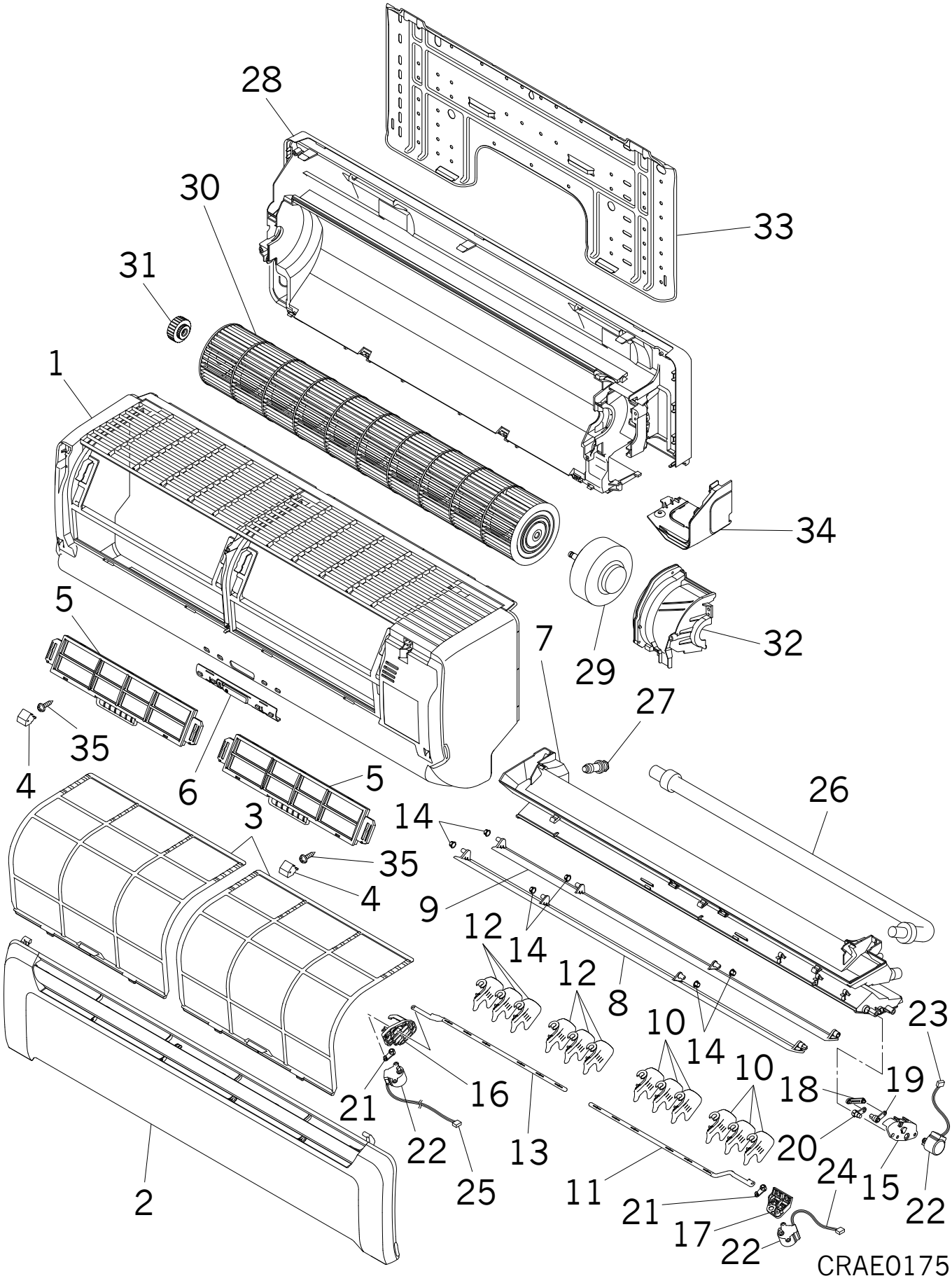


SRK10CFV-4

END ITEM NO. : RWA002F050D

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1-4	RKX 301A 002A	HEAT EXCH ASSY(AIR)	1			1	1	1	2	
2	RKX 315D 001	HEADER ASSY	1							
3	RKX 129A 016	BRACKET(L)	1							
4	RKX 315A 001	DISTRIBUTOR ASSY	1							
5-7	RKX 321A 001	PIPE ASSY	1							
6	SSA 323F 082	UNION(SLD)	1							FOR GAS
7	SSA 323F 082A	UNION(SLD)	1							FOR LIQ.
8	RKX 129A 001	PLATE ASSY,BAFFLE	1			1	1	1	2	
9	RKX 142A 001	BOX,CONTROL	1							
10-12	RKX 505A 001B	PWB ASSY	1			2	2	4	8	
11	SSA 555B 050C	VARISTOR	1			1	1	1	2	
12	SSA 564A 132	FUSE(CURRENT)	1			1	1	2	4	F 3.15A
13	SSA 551A 163L	SENSOR ASSY	1			1	1	2	4	INCL.SENSOR(ROOM TEMP.& HEAT EXCH.)
14	RKV 504A 500	HARNESS ASSY(POWER)	1			1	1	1	2	
15	SSA 561B 713	BLOCK,TERMINAL	1			1	1	2	2	
16	RKX 011G 001	LABEL,WIRING	1							
17	RKX 503A 001	DISPLAY ASSY	1			1	1	2	3	
18	RKX 505A 003	PWB ASSY(DISPLAY)	1			2	2	4	8	
19	RKJ 941F 001	SPRING,LEAF	1							
20	RKX 008A 003B	PARTS,STANDARD	1							
21	RKX 502A 001	CONTROL ASSY,REMOTE	1			2	3	5	10	
22	RKT 437A 011	FILTER,CLEAN	1			2	2	4	8	
23	RKT 437A 005	FILTER,LIGHT CLEAN	1			2	2	4	8	
24	RMA 012A 017	MANUAL,INSTRUCTION	1							
25	RKN 032A 002B	HOLDER(REMO-CON)	1			1	1	1	2	
(26)	RMA 011F 003AT	LABEL,MODEL NAME	1							

PANEL & FAN ASSY

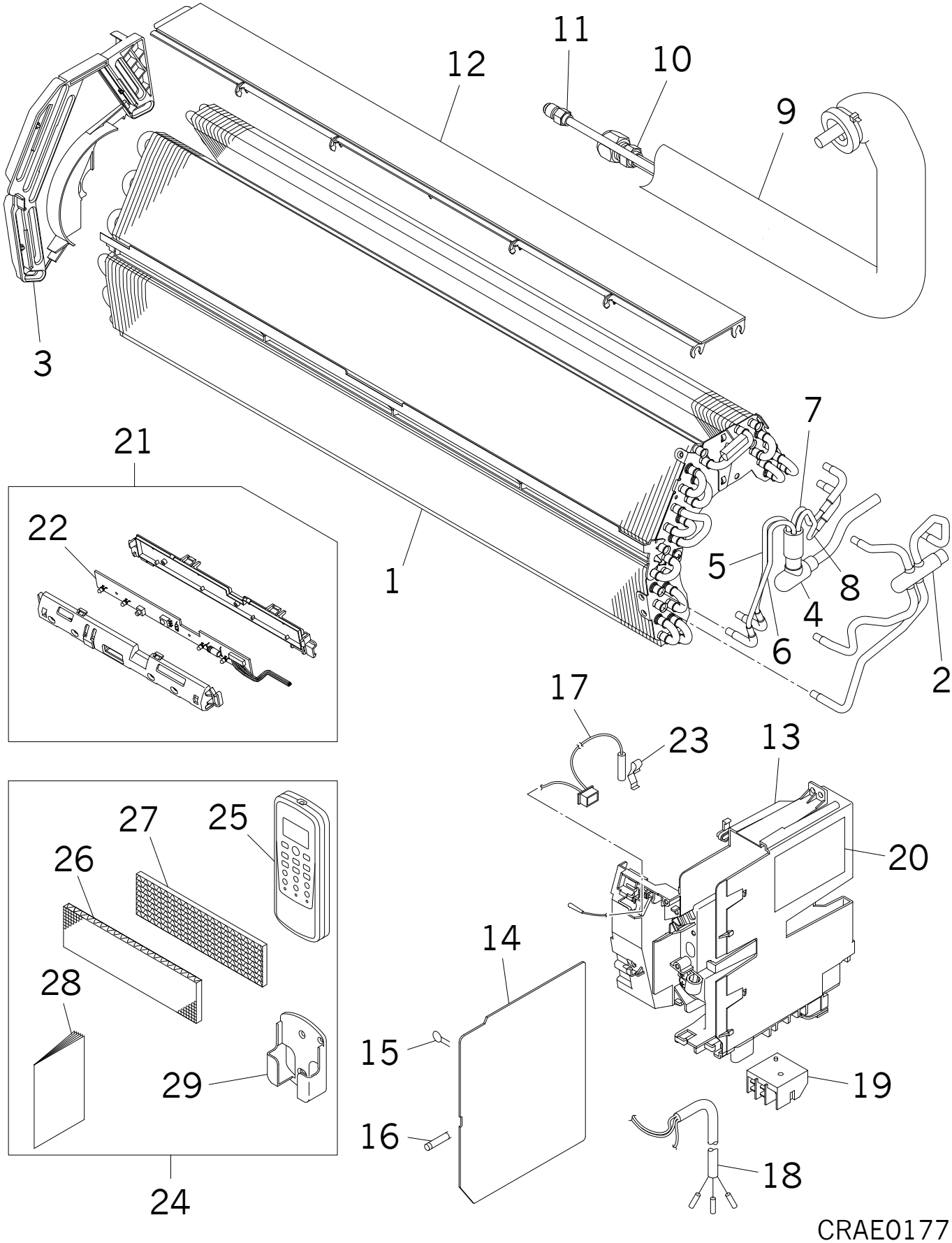


SRK13CFV-4

END ITEM NO. : RWA002F050F

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1-6	RKX 102A 001B	PANEL ASSY,FRONT	1			1	1	1	2	
1	RKX 122A 001B	PANEL,FRONT	1							
2	RKX 435A 004	PANEL ASSY,AIR IN	1			1	1	2	3	
3	RKX 437A 001	FILTER,AIR	2			1	1	1	2	W315×H294.3(t2)
4	RKX 129A 013	CAP	2							
5	RKX 129A 014	HOLDER,FILTER	2			1	1	1	2	
6	RKX 133A 001	PLATE,ORNAMENT	1			1	1	1	2	
7-27	RKX 435A 002	GRILLE ASSY,AIR OUT	1			1	1	2	3	
7	RKX 435A 003	GRILLE,AIR OUTLET	1							
8	RKX 436A 001	FLAP(A)	1							**UPPER**
9	RKX 436A 002	FLAP(B)	1							**LOWER**
10･11	RKX 436A 003	LOUVER ASSY(R)	1			1	1	2	2	
10	RKX 436A 005	LOUVER	6							
11	RKX 129A 008	PLATE,CONNECTING(R)	1							
12･13	RKX 436A 004	LOUVER ASSY(L)	1			1	1	2	2	
12	RKX 436A 005	LOUVER	6							
13	RKX 129A 009	PLATE,CONNECTING(L)	1							
14	RKW 935C 200	COLLAR	6							
15	RKX 129A 010	BRACKET,MOTOR(A)	1			1	1	1	2	
16	RKX 129A 011	BRACKET,MOTOR(B)	1			1	1	1	2	
17	RKX 129A 012	BRACKET,MOTOR(C)	1			1	1	1	2	
18	RKX 144A 001	LINK	1			1	1	1	2	
19	RKX 144A 002	CRANK(A)	1			1	1	1	2	
20	RKX 144A 003	CRANK(B)	1			1	1	1	2	
21	RKW 144A 204	CRANK(C)	2			1	1	1	2	
22	SSA 512T 052	MOTOR,STEPPING	3			1	1	1	2	FOR FLAP/LOUVER(R,L)
23	RKS 504A 100G	HARNESS ASSY	1			1	1	1	2	FOR FLAP
24	RKS 504A 100	HARNESS ASSY	1			1	1	1	2	FOR LOUVER(R)
25	RKS 504A 100L	HARNESS ASSY	1			1	1	1	2	FOR LOUVER(L)
26	SSA 423A 094	HOSE,DRAIN	1							
27	SSA 326A 047	PLUG	1							
28	RKX 111A 001	BASE ASSY	1			1	1	1	2	
29	SSA 511J 218	MOTOR,AC	1			1	1	1	2	FOR IMPELLER
30	SSA 431G 044	IMPELLER	1			1	1	2	4	
31	SSA 923C 114	BEARING,PLANE	1			1	1	1	2	
32	RKX 129A 005	COVER(MOTOR)	1			1	1	1	2	
33	RKX 032A 001	PLATE,INSTALLATION	1			1	1	1	2	
34	RKX 132A 001A	LID	1			1	1	2	4	
35	SSA 913A 007A	SCREW,TAP	4							4×14

HEAT EXCH. & CONTROL



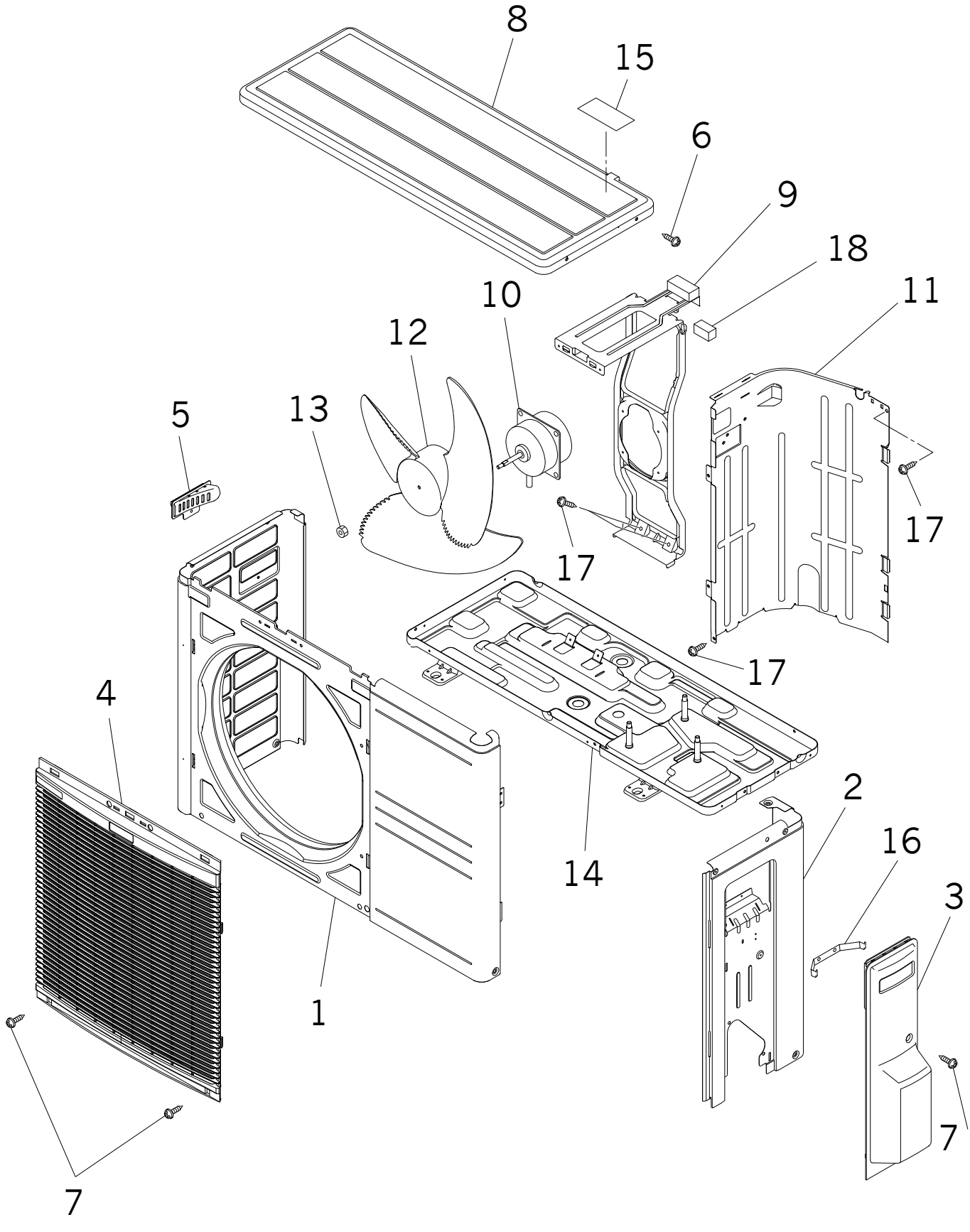
CRAE0177

SRK13CFV-4

END ITEM NO. : RWA002F050F

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1-8	RKX 301A 008	HEAT EXCH ASSY(AIR)	1			1	1	1	2	
2	RKX 315D 005	HEADER ASSY	1							
3	RKX 129A 016	BRACKET(L)	1							
4-8	RKX 315A 004	DISTRIBUTOR ASSY	1							
4	RKX 315A 003	DISTRIBUTOR	1							
5	RKX 315B 001	CAPILLARY	1							
6	RKX 315B 002	CAPILLARY	1							
7	RKX 315B 005	CAPILLARY	1							
8	RKX 315B 006	CAPILLARY	1							
9-11	RKX 321A 001A	PIPE ASSY	1							
10	SSA 323F 082B	UNION(SLD)	1							FOR GAS
11	SSA 323F 082A	UNION(SLD)	1							FOR LIQ.
12	RKX 129A 001	PLATE ASSY,BAFFLE	1			1	1	1	2	
13	RKX 142A 001	BOX,CONTROL	1							
14-16	RKX 505A 001C	PWB ASSY	1			2	2	4	8	
15	SSA 555B 050C	VARISTOR	1			1	1	1	2	Z
16	SSA 564A 132	FUSE(CURRENT)	1			1	1	2	4	F 3.15A
17	SSA 551A 163L	SENSOR ASSY	1			1	1	2	4	INCL.SENSOR(ROOM TEMP.& HEAT EXCH.)
18	RKV 504A 500	HARNESS ASSY(POWER)	1			1	1	1	2	
19	SSA 561B 713	BLOCK,TERMINAL	1			1	1	2	2	
20	RKX 011G 001	LABEL,WIRING	1							
21	RKX 503A 001	DISPLAY ASSY	1			1	1	2	3	
22	RKX 505A 003	PWB ASSY(DISPLAY)	1			2	2	4	8	
23	RKJ 941F 001	SPRING,LEAF	1							
24	RKX 008A 003B	PARTS,STANDARD	1							
25	RKX 502A 001	CONTROL ASSY,REMOTE	1			2	3	5	10	
26	RKT 437A 011	FILTER,CLEAN	1			2	2	4	8	
27	RKT 437A 005	FILTER,LIGHT CLEAN	1			2	2	4	8	
28	RMA 012A 017	MANUAL,INSTRUCTION	1							
29	RKN 032A 002B	HOLDER(REMO-CON)	1			1	1	1	2	
(30)	RMA 011F 003AV	LABEL,MODEL NAME	1							

PANEL & FAN ASSY



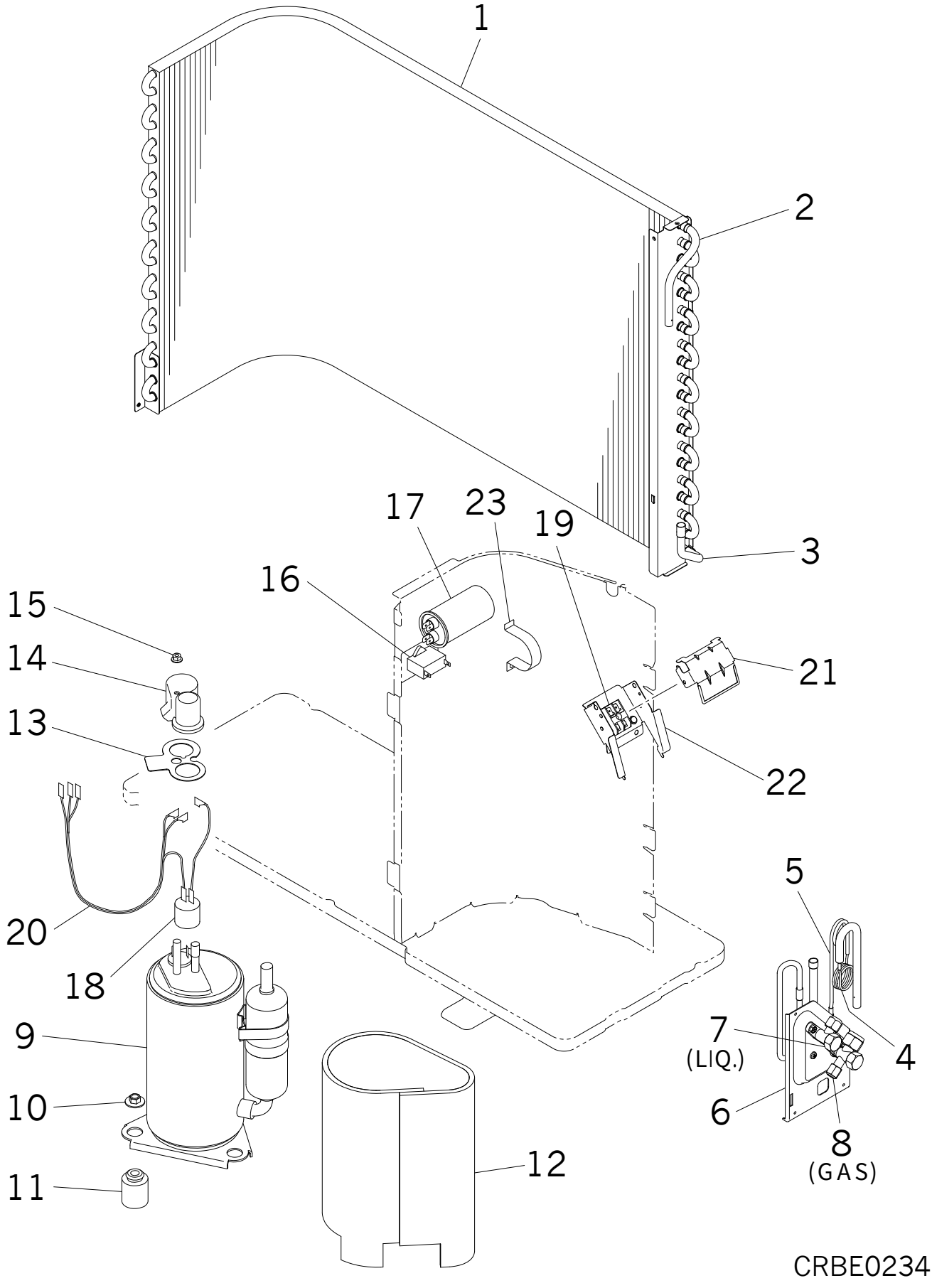
CRBE0233

SRC10CFV-4

END ITEM NO. : RWC003F056D

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1	RCS 122A 500	PANEL ASSY,FRONT	1			1	1	1	2	
2	RCS 123A 001	PANEL,SIDE(R)	1			1	1	1	2	
3	RCS 132A 001	PANEL,SERVICE	1			1	1	2	4	
4	RCS 435A 002A	GRILL ASSY,AIR OUT	1			1	1	2	3	
5	SSA 944B 036	HANDLE	1							
6	SSA 913A 034B	SCREW,TAP	17							4×8
7	SSA 913A 034C	SCREW,TAP	3							4×12
8	RCS 124A 500	PANEL ASSY,TOP	1			1	1	1	2	
9	RCS 116A 006	BRACKET ASSY	1							
10	SSA 511J 221	MOTOR,AC	1			2	2	4	8	
11	RCS 141A 500	PLATE,BAFFLE	1							
12	SSA 431B 213	PROPELLER	1			1	1	2	4	
13	RSA 914B 002	NUT,FLANGE	1							
14	RCS 111A 001D	BASE ASSY	1			1	1	1	2	
15	RSA 011H 016A	LABEL,NOTICE	1							
16	RCS 116A 502	BRACKET	1							
17	W011D04X008	TAP-SCREW,CRS-TRS 2	4							4×8
18	D100X20X036R	INSULATION	1							

HEAT EXCH. & CONTROL

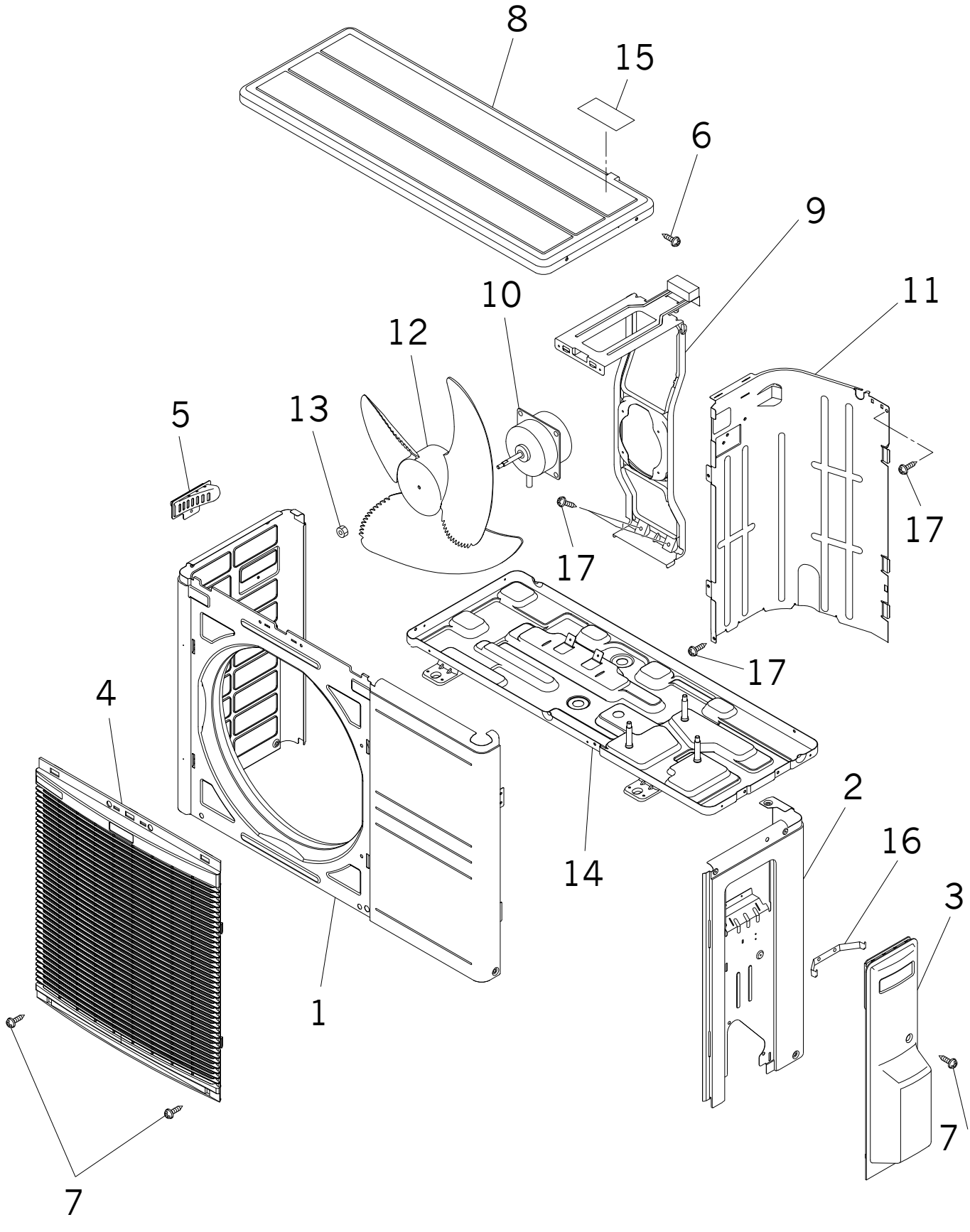


SRC10CFV-4

END ITEM NO. : RWC003F056D

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1-3	RCS 301A 001B	HEAT EXCH ASSY(AIR)	1			1	1	1	2	
2	RCP 321A 035A	PIPE	1							
3	RCS 321A 003A	PIPE	1							
4･5	RCS 304A 002	PIPING ASSY	1			1	1	1	2	
4	RCS 315B 001	CAPILLARY	1							
5	RCS 315B 002	CAPILLARY,SUB	1							
6	RCS 116A 004	BRACKET,VALVE	1							
7	RCS 381A 001	VALVE,SERVICE(1/4")	1			1	1	1	2	LIQ.
8	RCS 381A 002	VALVE,SERVICE(3/8")	1			1	1	1	2	GAS
9	RSA 201A 018	COMPRESSOR ASSY	1			1	2	3	8	
10	RSA 914C 001	NUT,FLANGE	2							
11	RMC 941C 002	CUSHION,RUBBER	3							
12	RCS 154D 001	INSULATION,COMP	1							
13	RSA 932C 005	GASKET,COVER	1							
14	RSA 947K 006	COVER,TERMINAL	1			1	1	2	4	
15	RSA 914C 002	NUT,FLANGE	1							
16	SSA 552A 842	CAPACITOR,RUNNING	1			1	1	1	2	CFO 1.8MF 450VAC
17	SSA 552A 843A	CAPACITOR,RUNNING	1			1	1	1	2	CC 25MF 370VAC
18	RSA 533B 004	PROTECTOR,MOTOR	1			1	1	1	2	
19	SSA 561B 669	BLOCK,TERMINAL	1			1	1	2	2	
20	RCS 504A 001	WIRING ASSY	1			1	1	1	2	FOR COMP.
21	RCS 142A 500	COVER(TB)	1							
22	RCS 116A 500	BRACKET(TB)	1							
23	SSA 937A 812	CLAMP	1							
(24)	RMC 011F 002AS	LABEL,MODEL NAME	1							

PANEL & FAN ASSY



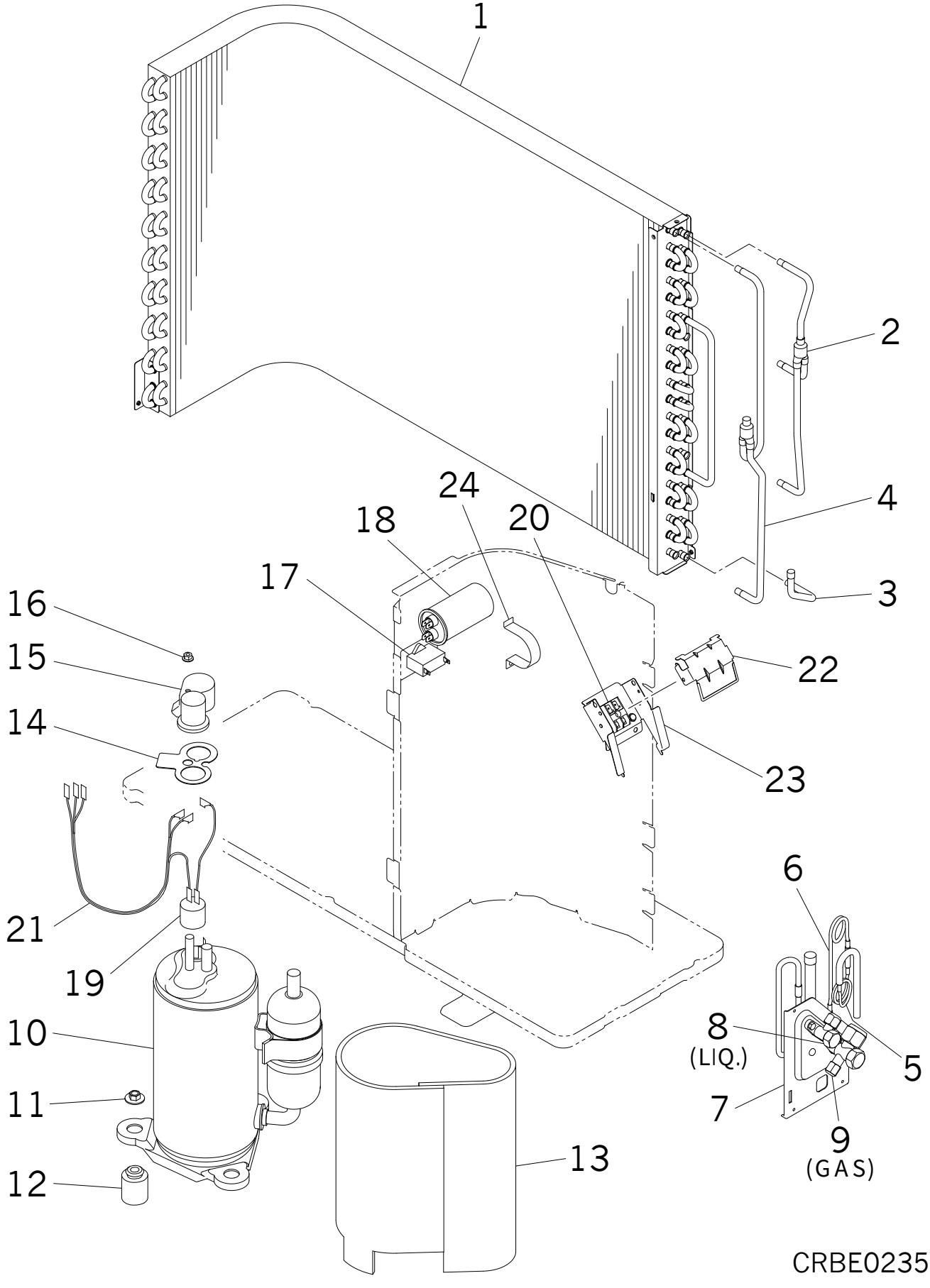
CRBE0239

SRC13CFV-4

END ITEM NO. : RWC003F056F

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1	RCS 122A 500A	PANEL ASSY,FRONT	1			1	1	1	2	
2	RCS 123A 001	PANEL,SIDE(R)	1			1	1	1	2	
3	RCS 132A 001	PANEL,SERVICE	1			1	1	2	4	
4	RCS 435A 002A	GRILL ASSY,AIR OUT	1			1	1	2	3	
5	SSA 944B 036	HANDLE	1							
6	SSA 913A 034B	SCREW,TAP	17							4×8
7	SSA 913A 034C	SCREW,TAP	3							4×12
8	RCS 124A 500	PANEL ASSY,TOP	1			1	1	1	2	
9	RCS 116A 006	BRACKET ASSY	1							
10	SSA 511J 222	MOTOR,AC	1			2	2	4	8	
11	RCS 141A 500	PLATE,BAFFLE	1							
12	SSA 431B 213	PROPELLER	1			1	1	2	4	
13	RSA 914B 002	NUT,FLANGE	1							
14	RCS 111A 001C	BASE ASSY	1			1	1	1	2	
15	RSA 011H 016A	LABEL,NOTICE	1							
16	RCS 116A 502	BRACKET	1							
17	W011D04X008	TAP-SCREW,CRS-TRS 2	4							4×8

HEAT EXCH. & CONTROL



SRC13CFV-4

END ITEM NO. : RWC003F056F

No.	Part No.	Part Name	RE.Q	Recommendable Purchased Q'ty						Note
				10	30	50	100	500	1000	
1-4	RCS 301A 101	HEAT EXCH ASSY(AIR)	1			1	1	1	2	
2	RCS 321A 054	PIPE ASSY	1							
3	RCS 321A 053	PIPE	1							
4	RCS 321A 055	PIPE ASSY	1							
5･6	RCS 304A 005	PIPING ASSY	1			1	1	1	2	
5	RCS 315B 012	CAPILLARY	1							
6	RCS 315B 004	CAPILLARY,SUB	1							
7	RCS 116A 004	BRACKET,VALVE	1							
8	RCS 381A 001	VALVE,SERVICE(1/4")	1			1	1	1	2	LIQ.
9	RCS 381A 003	VALVE,SERVICE(1/2")	1			1	1	1	2	GAS
10	RSA 201A 017	COMPRESSOR ASSY	1			1	2	3	8	
11	RSA 914C 001	NUT,FLANGE	2							
12	RMC 941C 002A	CUSHION,RUBBER	3							
13	RCS 154D 002	INSULATION,COMP	1							
14	RSA 932C 005	GASKET,COVER	1							
15	RSA 947K 006	COVER,TERMINAL	1			1	1	2	4	
16	RSA 914C 002	NUT,FLANGE	1							
17	SSA 552A 842A	CAPACITOR,RUNNING	1			1	1	1	2	CFO 2.5MF 450VAC
18	SSA 552A 843B	CAPACITOR,RUNNING	1			1	1	1	2	CC 30MF 400VAC
19	RSA 533B 005	PROTECTOR,MOTOR	1			1	1	1	2	
20	SSA 561B 669	BLOCK,TERMINAL	1			1	1	2	2	
21	RCS 504A 001	WIRING ASSY	1			1	1	1	2	FOR COMP.
22	RCS 142A 500	COVER(TB)	1							
23	RCS 116A 500	BRACKET(TB)	1							
24	SSA 937A 812	CLAMP	1							
(25)	RMC 011F 002AT	LABEL,MODEL NAME	1							

ROOM AIR-CONDITIONING
TECHNICAL MANUAL & PARTS LIST

Manual No. '06·SRK-T·056